JORNADA & NINO *plus* 95 NEW PRODUCTS

For Users of **Windows® CE**

Handheld PC MAGAZINE

Jan-Feb 1999 Vol. 2, No. 1

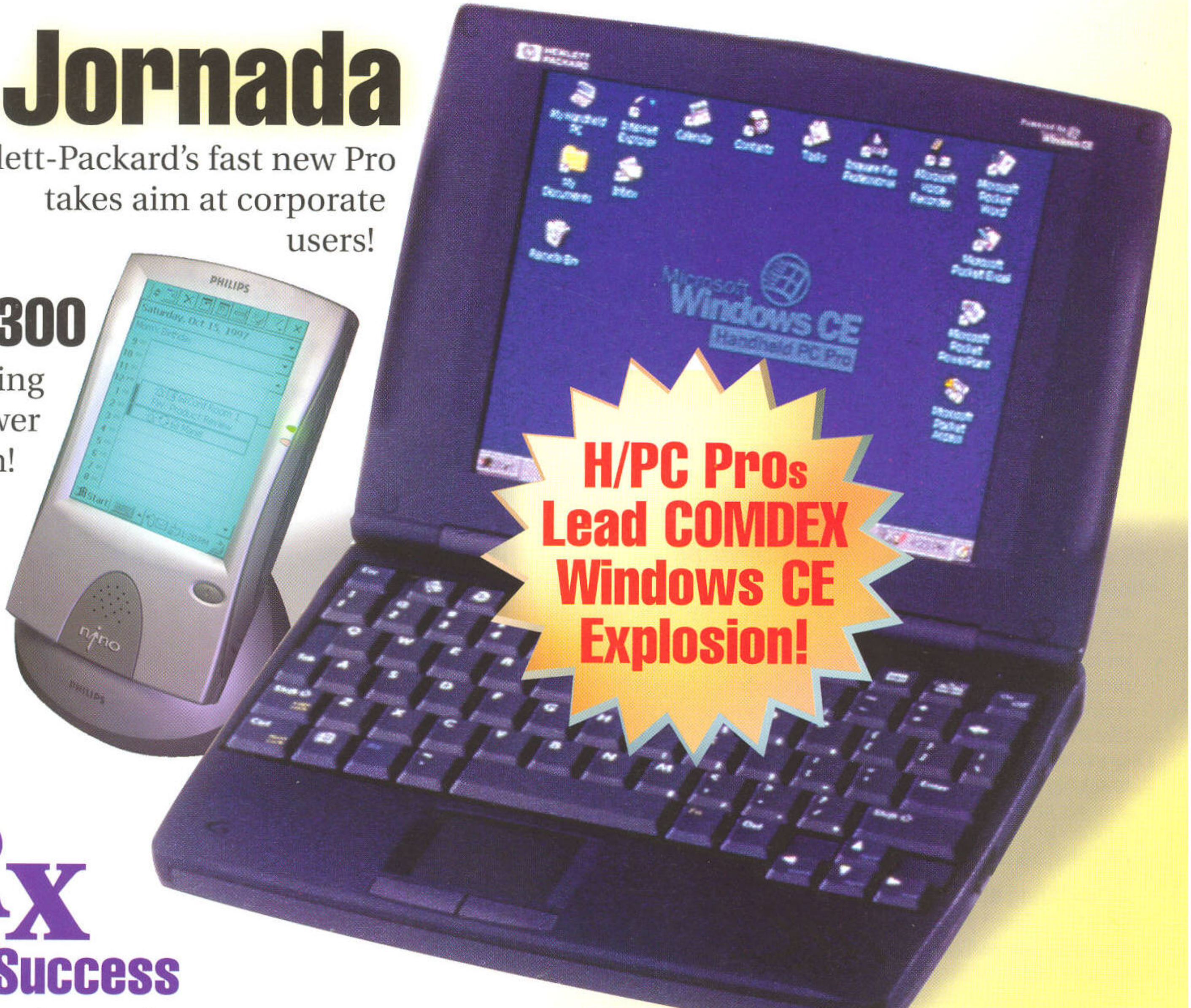
Make the most of your Handheld and Palm-size PC! ◆ **www.hpcmag.com**

Jornada

Hewlett-Packard's fast new Pro takes aim at corporate users!

Nino 300

Eurostyling with Power to Match!



H/PC Pros Lead COMDEX Windows CE Explosion!

Rx for Success

H/PC makes perfect Physician's Assistant

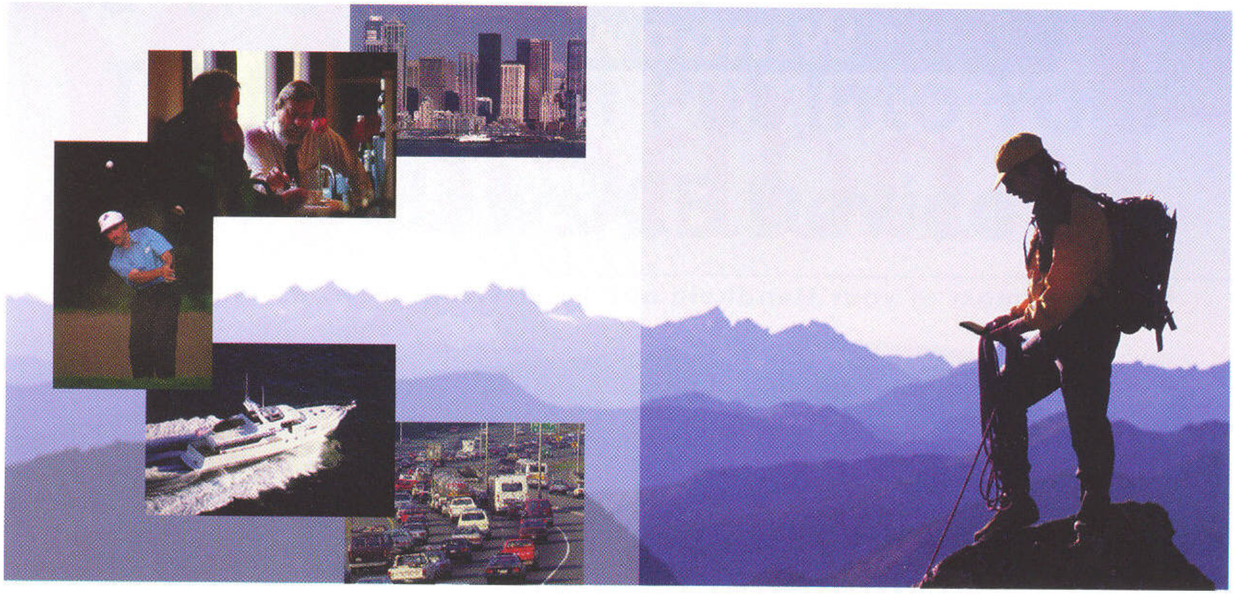
Put THE WEB in Your Pocket with MOBILE CHANNELS!

Lightning Fast LAN Connections

U.S. $4.95

- Andrew Seybold on Wireless Knowledge
- Tips & Tricks

Mobile Solutions for a New Generation



Now access your e-mail, calendar, address book and corporate database from anywhere!

Products and Services for your PC Companion

Now you can carry your link to your corporate data in your pocket or purse! That's because River Run Software Group provides a suite of products and services that lets you and your Windows CE-based PC Companion access your company information—directly and remotely, over dial-up, circuit-switched cellular and wireless packet data networks.

Full E-Mail Capability

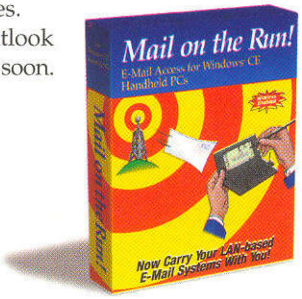
Using the award-winning *Mail on the Run!*® product you can easily send, receive, store, forward and reply to e-mail messages on Microsoft Exchange Server, Lotus Notes, Microsoft Mail, Lotus cc:Mail and Novell GroupWise. You can process your e-mail while on-line, or download selected message headers and mail items for processing offline. The *Mail on the Run!* product has sophisticated support for handling file attachments, automatically converting files into native formats and providing control over the amount of information to be downloaded. Additional features enable you to set filters to process your mail more efficiently and minimize connect time, as well as to download entries from the corporate address book directly into the Contacts application on your PC Companion.

Calendaring and Scheduling

The *All in Sync!*® product allows you to remotely access your mail and synchronize Calendar, Tasks and Contacts databases on your PC Companion with group calendaring and scheduling, tasks and contact data stored in Lotus Notes. Support for Microsoft Schedule+/Outlook and Lotus Organizer® will be available soon.

Mobile Application Builder with Database Access

River Run Software Group and TechBridge Technology Corporation have joined together to create *Mobile*Apps™, a powerful new technology for application development. *Mobile*Apps contains an easy-to-use visual GUI builder, enabling developers to create customized applications for immediate query, data update and data synchronization to any ODBC-compliant database, including Microsoft Access, SQL Server, Lotus Notes, etc.


Mail on the Run!
E-Mail Access for Windows CE Handheld PCs
Mail on the Run!
Now Carry Your LAN-based E-Mail Systems With You!

Multiple Platforms and Connectivity Options

River Run's family of remote enterprise access software products support all versions of PC Companions running all versions of the Windows CE operating system. *Mail on the Run!* also runs on Windows 95 laptops for wireless remote access to LAN-based e-mail systems.

Flexible communication options are a major advantage of River Run's mobile solutions product family. You can access your e-mail, calendar and corporate data directly and over wireline as well as wireless networks.

Professional Services

Let River Run Software Group use their expert and professional services to develop a custom, wireless or wireline remote access solution for you. After all, we're an ISO 9001-certified corporation that's been developing and marketing mobile computing and network management products for Fortune 500 companies since 1989.

Visit our Website

For further product information, special promotions and to download free trial software, please visit us online. For information on *Mobile*Apps, please contact TechBridge at (905) 513-7800 or www.tbridge.com.

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V.90
56K STANDARD

ok NOKIA

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APPROVED ERICSSON

Rockwell

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go *farther*

TDK
CompactFlash™
48MB
CF

Go Farther with TDK's Compact Flash Memory Cards. Instantly add high speed, reliable and affordable storage space to your handheld PC. Store data, backup information, and conveniently transfer files to your desktop. Available in 8mb, 16mb, 32mb, and 48mb.

What's stopping you from getting the most out of your handheld PC?

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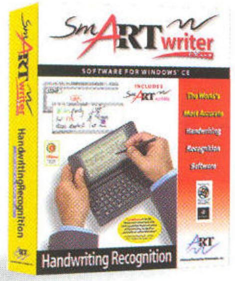
Get the Recognition

Frustrated by the Tiny Keyboard on your HPC?

...Enter Data in Your Own Handwriting!


smARTwriter
Software for Windows CE
Handwriting Recognition

Forget the tiny keyboards on H/PCs. Here are six great reasons for you to look at **smARTwriter® Plus** for Windows CE.

Accurate & Fast

smARTwriter Plus gives you the best recognition accuracy because it learns your personal handwriting. **smARTwriter Plus**' patented algorithm uses a unique linguistic layer that even further enhances its accuracy. Recognizes characters five times faster than the actual writing speed.

Adaptable

Write your own way! We won't teach you a new alphabet or make you write as if you were in first grade. **smARTwriter Plus** adapts to your unique writing style immediately after performing a 5 minute QuickTrainer™ session. Correct, change, add or modify any character "on-the-fly" to even further increase recognition accuracy.

Easy to use

Write naturally anywhere on the screen in any size using characters, shortcuts or gestures. Teach the system to recognize "b/c" as "because," or draw a happy face to bring up the word "happy" on your screen.

Hardware Efficient

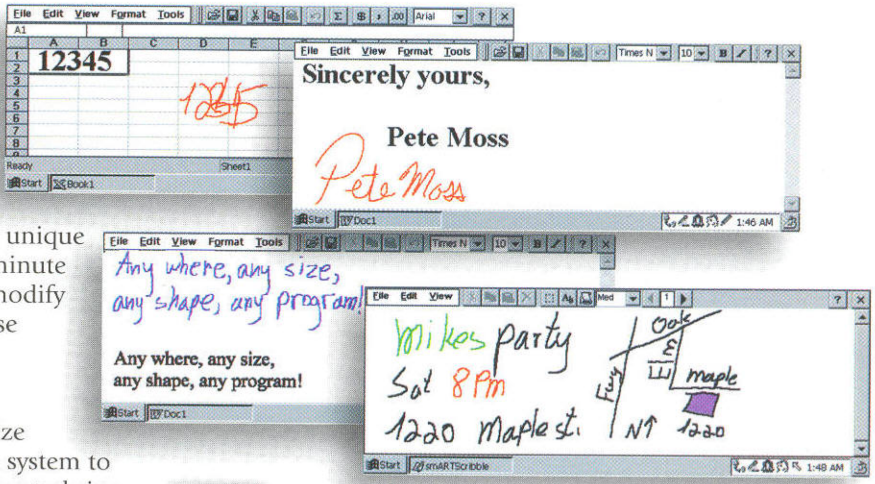
smARTwriter Plus requires minimal memory space and does not affect the processing speed of your H/PC unit.

Flexible

smARTwriter Plus comes with **smARTscribble™**, the handy utility that allows you to scribble your thoughts and notes, or even make a quick sketch!

Multilingual

smARTwriter Plus supports all Western European characters so you can write in French, Spanish, German and more.


File Edit View Format Tools
Start
Book1
Doc1
smARTScribble
1:46 AM
1:48 AM

12345

Sincerely yours,

Pete Moss

Any where, any size, any shape, any program!

Mikes party
Sat 8pm
1220 Maple st.
Fury
Oak
maple
N
1220

FOR WINDOWS CE HANDHELD PCs
smARTwriter Plus with smARTscribble for HPCs runs on Windows CE v. 1 and 2.

Available at the ART Web site or leading resellers, including those listed below:

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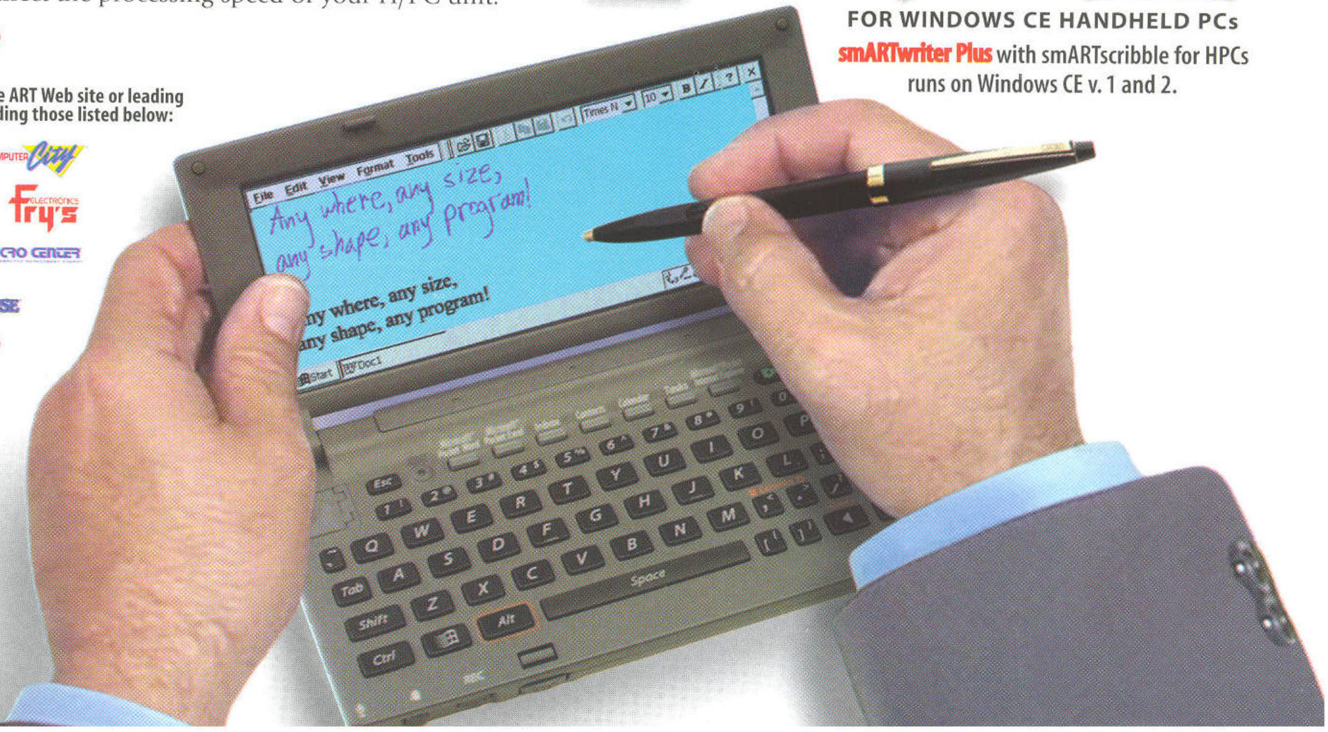
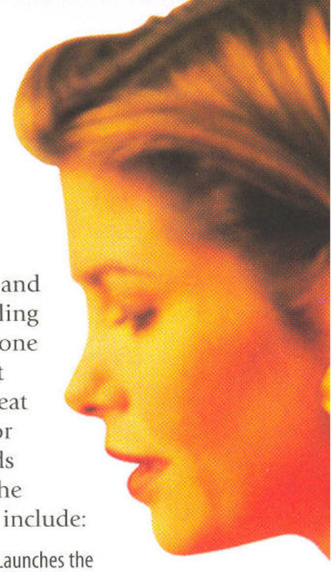
Computer City
CompUSA
Fry's Electronics
Micro Center
MicroWarehouse
MobilePlanet
MobileSoft
PCMall
PC Zone
UNPLUG.IT


Any where, any size, any shape, any program!
Any where, any size, any shape, any program!

That You Deserve!

ART recognition
SOFTWARE FOR PALM-SIZE WINDOWS CE
The only Voice and Handwriting Software for Your Palm-size PC!
Get the Recognition You Deserve
Voice and Handwriting Recognition

It's all Here: Voice, Handwriting, Macros, Gestures . . . in the Palm of Your Hand!



Teach Your Palm-size PC to Recognize Your Handwriting

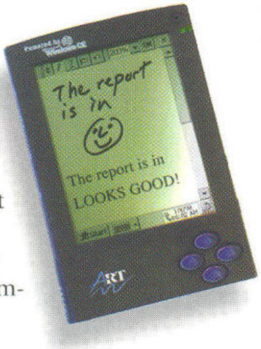
ART's award-winning **smARTwriter**® soft- r text and data using your own printed handwriting. Forget struggling to learn how to write with graffiti characters. Your Palm-size PC will learn your writing in just a few minutes.

World's Most Accurate Recognition

It's the full version of the handwriting recognition software that earned **Mobile Computing**'s **1st Class Award**, and is the **1998 mobilis Readers' Choice Award** winner for Windows CE software. The outstanding out-of-box recognition available gets even better as you use it, and includes ART's proprietary "Ink-Smoothing" to remove the jagged edges caused when writing in a bumpy environment such as in a car or plane.

Easiest to Use

It works with any application. Write any size, anywhere on the screen either upright (portrait) or flat (landscape).



Create Gestures & Macros

Define your own shorthand gestures that can execute unlimited keyboard strokes. Open files, launch applications or insert entire paragraphs into a document by simply writing a custom gesture you create.

PC MAGAZINE **WINNER**
Golden Gavel Award
June 25, 1998

Use Your Voice to Operate Your Palm-size PC

Fast, accurate voice recognition saves time and increases your productivity. No more scrolling down lists for files, contact names, and phone numbers-just tell your palm-sized PC what you want to do! You can choose from a great collection of commands already built in, or easily create your own library of commands trained to recognize your voice! Some of the incredibly time-saving commands built in include:

- **Open** + a document or note filename to open that document
- **Goto** + an application name to launch that application.
- **Dial** + contact name from your address book to dial a phone number via DTMF tones. Supports multiple numbers.
- **Email** + contact name opens and addresses a new email form.
- **Fax** creates and addresses a new fax form. (Requires bFax Express).
- **Voice Mail** Include a voice message that will be attached to an email.
- **Show Details** + contact name to display the complete contact record in the address book.
- **Get Mail** Launches the Inbox, dials your email server, and checks on-line for new messages.
- **Calendars** launches the Calendar application and specify a view (day, week, month, year, today or agenda) .
- **Macro** Execute a user-defined macro. Use it to insert boiler plate text into a document (such as your complete name and address) and teach your Palm-size to work like you do!

ART recognition™
FOR WINDOWS CE PALM-SIZE PCs

SmART command
SOFTWARE FOR WINDOWS CE
Open price list
Call John
Send email
Voice Recognition

Just Say it!

Let smARTcommand® do the work for you!

No need to scroll through your file directory or do the double-tap dance on your cluttered H/PC screen – in seconds you can teach **smARTcommand** to link a single voice command to your most frequently used applications or your favorite documents. Just say the word and your H/PC springs into action!

Includes smARTcontact®!

Say your contact's name to bring up a contact record. Say "dial" and **smARTcontact** to dial your contact's phone number or "email" to launch Internet Explorer and insert your contact's email address. **smARTcontact** works great with the Contact Manager supplied with your Windows CE-based H/PC.

Handheld PC Magazine TOP 10 for Windows CE

SmART command®
FOR WINDOWS CE HANDHELD PCs
smARTcommand with **smARTcontact** for HPCs running Windows CE v. 1.0 or 2.0

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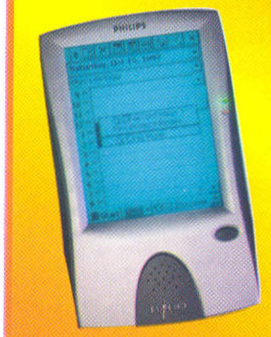

Nino 300

Packed with Features!
Sleek Eurostyling!
Power and Speed!

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FREESTYLE

EVEREX

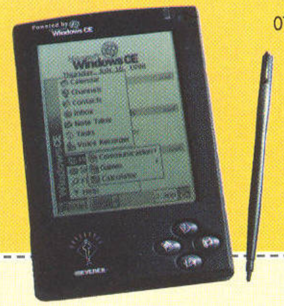
"PalmPilot, beware."

- The Baltimore Sun

There really is no comparison. With the Freestyle PC Companion, we at Everex have officially raised the bar for Palm-size computing to a new level of power and flexibility. Powered by Microsoft Windows® CE, and featuring instant desktop synchronization, a unique vibrating alarm, optional 33.6 Fax / Modem, and nearly limitless storage capabilities, the Freestyle provides the tools to manage your information and stay current. Take a voice note, jot down an appointment in your own handwriting, and check your email on the run - ***with the Freestyle, it's easy to be connected, and stay connected.***

	Everex Freestyle™	**Palm III™**
Operating System	Windows CE 2.0 - familiar Windows interface which is instantly recognizable to Windows 95 / 98 users and provides seamless desktop integration	Palm OS
Screen Resolution	240 x 320 pixels per inch	160 x 160 pixels per inch
RAM	4 / 8 MB (Upgradable)	2 MB
Backlight	Yes	Yes
One-handed Navigation	Yes	No
CompactFlash Slot	Yes - support for Memory cards (up to 48 MB) Wireless communication Bar Coding, etc	No
Voice Recorder	Yes	No
Infrared Port	Yes - industry standard IRdA Port allows Freestyle to "beam" info to any device (notebook computer, network printer, lor PDA) equipped with standard IRdA	Yes - but proprietary IRdA allows you to communicate only with another Palm III
Vibrating Alarm	Yes - allows for silent notification of appointments	No
Digital Ink Recognition	Yes - allows you to store notes and drawings in your own handwriting.	No
MobileCradle	Yes - a foldable cradle that provides an additional battery compartment for the Freestyle while traveling.	No
Integrated 33.6 Fax / Modem	Yes - housed in the MobileCradle on the Freestyle Executive	No

Feature for feature, the Everex Freestyle is the most powerful Palm-size PC available, putting the power and flexibility of Microsoft Windows CE in the palm of your hand. And now, when you purchase an Everex Freestyle Manager or Executive model between **October 15th and November 30th, 1998**, you are eligible for a $50.00 rebate from Everex. Simply send us your old PalmPilot™ along with the form below, and Everex will send you $50.00.



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Purchase Date:

By signing below, I certify that I have read and understand the Terms and Conditions in this form, and that the information I've provided is true and correct.

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3. Rebate good only on products purchased between 10/15/98 and 11/30/98
4. Rebate forms must be postmarked by December 05, 1998
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6. Void where prohibited, taxed, or restricted by law
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12. Please make a copy of the completed rebate form and sales receipt to retain for your records

WINDOWS MAGAZINE WIN 100 1998

1998 CRW LABS EDITOR'S CHOICE

PC WEEK BEST OF COMDEX WINNER

FINALIST BYTE BEST OF SHOW

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From The Publisher

Hal Goldstein

A little blindness is necessary when you undertake a risk. You have to have a little suspension of disbelief where you say, "Hey, we're going to do this unproven product. Let's do our best." — Bill Gates

When you find something that works, you tend to stick with it. This is true whether you use a Windows CE device, or a PalmPilot, or a paper day-planner. In fact, I still carry around Helwett-Packard's DOS-based 200LX Palmtop PC (the subject of our sister publication, *The HP Palmtop Paper*, www.palmtoppaper.com). I have been slow to convert to a Windows CE PC Companion.

However, someone has to blaze new trails. Microsoft deserves a lot of credit for Windows CE. First, they came up with the idea of an industry-standard Windows-like operating system for small PCs. Then they communicated their vision to HP, Casio, Philips, NEC, LG, Hitachi, and Compaq. Finally, recognizing the importance of software solutions, they enticed developers to write software for Windows CE. The first releases of Windows CE did not achieve critical acclaim. However, Microsoft, always willing to make mistakes and take feedback, has made real improvements with each version of Windows CE.

At Fall 1998 COMDEX I finally became convinced. Windows CE is not only here to stay, it has built up an incredible momentum. Creative hardware and software solutions abound from vendors large and small. Microsoft, PC Companion manufacturers, and third party developers deserve credit for their persistence. Readers of this publication also must be commended for their willingness to experiment with this new platform and see its possibilities.

Microsoft and its OEM partners recently created a new product category: the "Handheld PC Professional Edition" (H/PC Pro). The "one-size-fits-all" philosophy of the first H/PCs started to slip with Windows CE 2.0 H/PCs and Palm-size PCs. It slips even further with the H/PC Pro. Greater variety will be available to the corporate and individual consumer. Even so, Microsoft still has a lot of work to win the PC Companion war. It still has to show the huge and growing PalmPilot base why the Palm-size PC is a better solution. And it has to provide compelling alternatives to satisfied users of the HP 200LX, Psion, and other palmtop computers. Perhaps, even a bigger challenge is the ever-increasing number of smaller sized and priced laptop computers that are hitting the market. Microsoft has to convince the business and computer community that the Handheld PC Pro is a viable alternative.

I'm convinced. When I travel, I now take a NEC 750c MobilePro with me. (I look forward to using an H/PC Pro from HP, Sharp, Vadem, NEC, Hitachi, or LG.) It's small enough to carry with me on a plane in a briefcase, it pops on instantly when I press the power button, and has a long battery life so I don't have to carry spares. When traveling I need e-mail and Internet access, a word processor, and a spreadsheet program (OK, and games). I've got all that on the H/PC, without the bulk and frustrations of a laptop.

Rich Hall, Tom Gibson, and our entire staff welcome you to our second year of publishing *Handheld PC Magazine*. We're sure that it will be a very exciting year in the world of PC Companions.

Hal Goldstein

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January/February 1999

Increasing Your Personal Power by Expanding Your PC Companion's Potential

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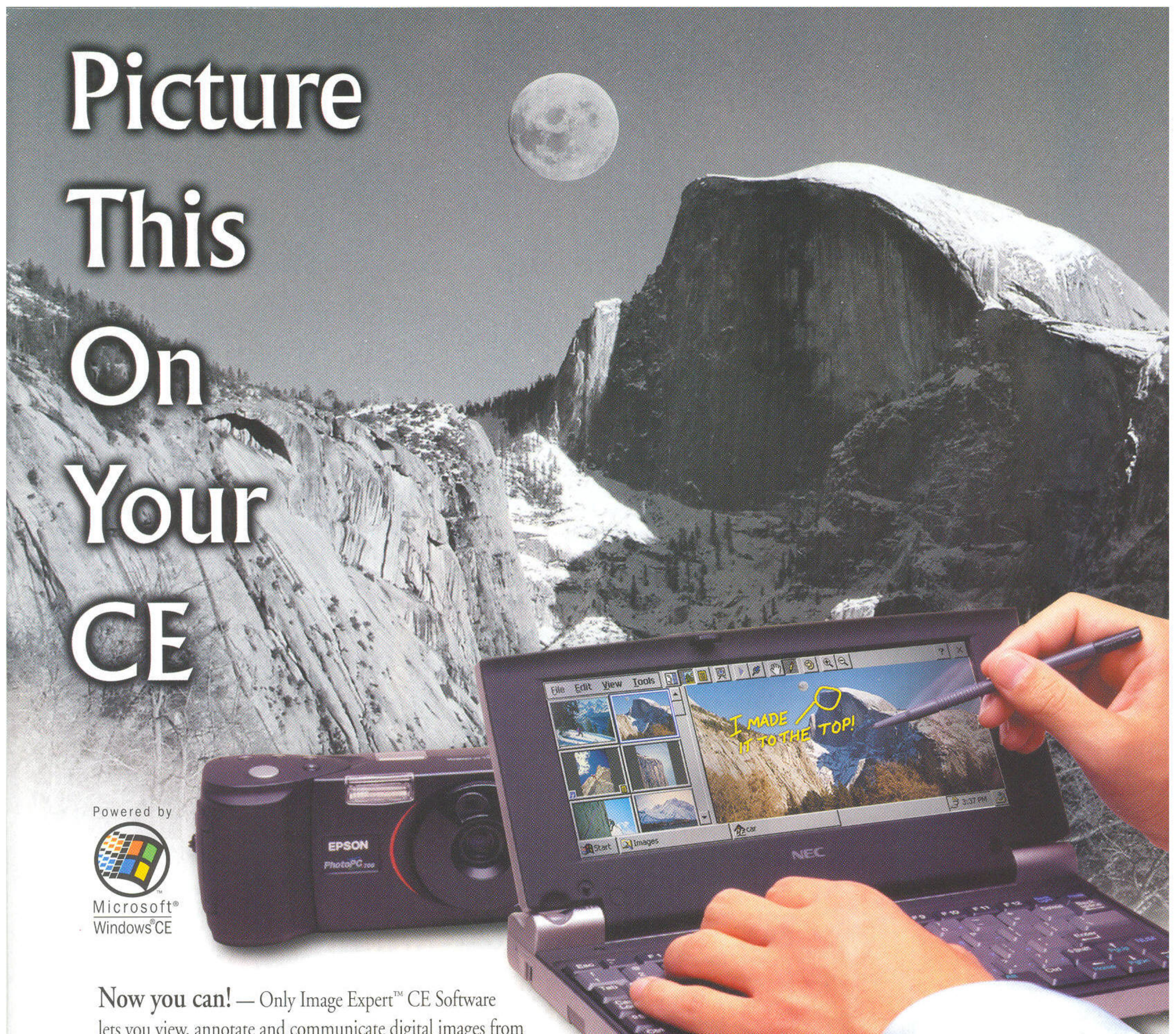

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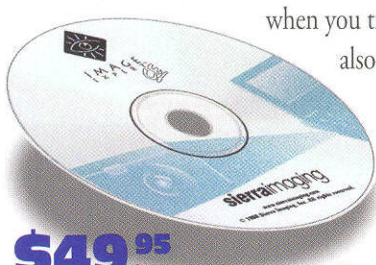

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sierraimaging

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"I am astonished
at the amount of useful, high quality content, and the range of reviewed and advertised products for Windows CE"

—Toby Lawrence

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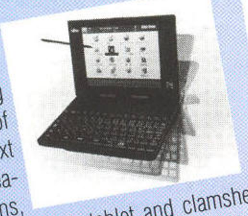
>>>NEWS BYTES<<<

Fujitsu to introduce H/PC Pro



Fujitsu (www.fujitsu-pc.com or www.fpsi.fujitsu.com) has announced that it is developing and plans to introduce a line of Handheld PC Pros over the next year. The Fujitsu devices will feature large VGA touch screens, touchtypeable keyboards, and come in tablet and clamshell configurations. According to Fujitsu, the Handheld PC Pros will be based on their INTERTop (see above), a half-notebook-sized PDA available in Japan. Fujitsu collaborated with Microsoft in the development of the Windows CE Handheld PC Professional Edition, providing several hundred INTERTOP CE development platforms used to test the new version of the operating system and H/PC Pro applications.

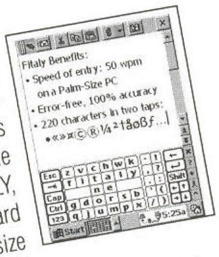
NCC/Everex introduce PalmScribe Freestyle Palm-size PC

NCC, Inc. (www.digitaldictate.com) and Everex (www.everex.com) have announced the introduction of the PalmScribe Freestyle. PalmScribe combines NCC's speech recognition technology with Everex's Freestyle Palm-size PC. Voice Recording memos can be transferred to the desktop PC and automatically transcribed into text files.

Casio Soft to develop software for Windows CE PC Companions

Casio Computer Company has established Casio Soft, Inc. (www.casiosoft.com), a subsidiary that will provide retail software products and development services for the Windows CE market. Casio Soft has already announced its first three software packages for Windows CE users: CSI Project is a project management program; CSI Outliner is an outliner and list manager. CSI PowerPack is a collection of Windows CE utilities. Please see page 38 of PC Companion Products for more information on these products, and for Casio Soft contact information.

FITALY



Fitaly Benefits:
- Speed of entry: 50 wpm on a Palm-Size PC
- Error-free, 100% accuracy
- 220 characters in two taps:
- «»¤©®¼²†åøßƒ…

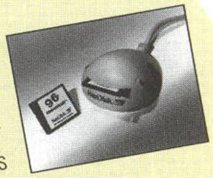
Textware Solutions (www.twsolutions.com) has announced the release of FITALY, a virtual keyboard for the Palm-size PC. The FITALY key arrangement minimizes pen travel, placing the most-used keys in the center of a virtual keyboard displayed on the Palm-size PC's screen.

New Handheld PC Professional Editions announced

A number of OEM manufacturers have announced that they are developing, or have released a version of the new Handheld PC Professional Edition. These include the Hewlett-Packard HP Jornada 820, the LG Electronics Phenom Express, the NEC MobilePro 800 and MobilePro 770, the NTS Dreamwriter I.T., the Samsung eGO note H/PC Pro, Sharp Mobilon TriPad PV-6000 and Mobilon Pro PV 5000, the Vadem Clio H/PC Pro. A brief review of the HP Jornada is on page 12 of this issue. More information on the other H/PC Pros is available in our At A Glance section, beginning on page 43.

In addition, the following manufacturers are announced on the Microsoft Website as supporting Windows CE Handheld PC Professional Edition: Casio, Compaq, Everex, Fujitsu, and Hitachi. The following manufacturers have not been formally announced, but are rumored to be supporting the Handheld PC Professional edition: IBM and Featron.

SanDisk Introduces higher-capacity CompactFlash memory cards



SanDisk (www.sandisk.com) has announced that it will offer four new higher-capacity CompactFlash memory cards. According to SanDisk the new 64 MB, 80MB, 96MB, and 160MB CF memory cards were developed to provide greater data storage for mobile computers, including the new Windows CE Handheld PC Professional Edition.

Photo Access helping manufacturers develop Windows CE digital cameras

Photo Access is developing integrated circuits and proprietary software that will allow digital camera manufacturers to deliver digital camera products based on the Windows CE operating system. The Company is developing a product line that will include the following:

- PhotoChip — a low-cost digital ASIC optimized for still-image capture and processing.
- PhotoEmail — e-mail application for sending photos directly from the camera.
- PhotoPrintIT — application for sending images directly to photo-quality printers.
- PhotoEdit — photo editing software for simple image enhancement on the camera.
- PhotoDevelop — an application that lets consumers order prints over the Internet, directly from the camera.
- PhotoSettings — an application that lets consumers change camera settings, including flash, F/Stop, and timer.
- PhotoAccess Internet Services — back-end photography services for fulfilling requests sent over the Internet.

No word on when the cameras will be announced. For more information, contact: Photo Access Corp.; Web: www.photoaccess.com/

>>>NEWS BYTES<<<

Intermec Technologies announces the Data Collection PC

Data Collection PC is a family of Windows CE data-collection incorporating Intermec's high-performance wireless LAN technology, bar code scanning and power management features. According to Intermec (www.intermec.com), Data Collection PC will let IT managers seamlessly develop and support a completely integrated network. The first device in the new line will be available in the first half of 1999, with a complete software developer kit (SDK).

Spyglass to offer Windows CE development services

Spyglass (www.spyglass.com) has established a Windows CE consulting practice to work with consumer electronics, telecommunications, office equipment, wireless, cable and direct satellite companies interested in developing products and services for the Windows CE platform. In addition to providing customizations and integration around Spyglass' recently announced Device Mosaic for Windows CE browser, Spyglass will help develop lower-level custom shell development for companies developing Embedded CE devices; work on systems used for machine control on the factory floor, as well as higher level application development and systems integration revolving around the Palm-size PCs, handheld PCs and auto PC line of products based on Microsoft's Windows CE operating system. Spyglass is an approved Windows CE Systems Integrator, and has been providing Windows CE Professional Services work for direct licensees of the Windows CE operating system.

FutureSoft enhances DynaComm

FutureSoft , Inc. (www.futuresoft.com) announced that they have enhanced the functionality of their DynaComm Connectivity Series (DCS) for Windows CE, including providing support for H/PC Pros. DCS provides access to all major host systems including IBM, Tandem, Digital and UNIX. DCS allows H/PC users to utilize their devices as data terminals in order to access legacy information while on the road or working remotely.

GoAmerica to join WirelessKnowledge LLC partnership

GoAmerica Communications Corp. (www.goamerica.net) will partner with wirelessKnowledge LLC (www.wirelessknowledge.com), the newly-announced joint venture between Microsoft and QUALCOMM Inc., to help bring wireless data solutions to wireless carriers and corporations. Under the terms of the partnership, GoAmerica will work with corporations utilizing the wirelessKnowledge Service and assist them in creating corporate data solutions for their mobile workers. Working with wirelessKnowledge, GoAmerica will provide integration services for carrier customers utilizing the wirelessKnowledge Service who require "turn-key" implementations. GoAmerica will manage initial corporate wireless data deployments, and provide custom software development services to develop interfaces between corporate data and Microsoft Exchange servers. In addition, GoAmerica will provide training for those corporations, including user orientation sessions and on-site in-depth solutions training.

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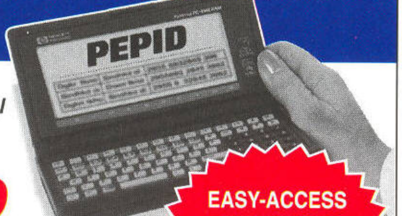

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Data Collection PC With Middleware

Intermec (www.intermec.com) Epic Data International will offer Enterprise Resource Planning (ERP) applications for a new Windows CE-based Data Collection PC, scheduled to be released in the first half of 1999. Epic Data's middleware lets you route data collected by the Data Collection PC to the IT system.

>>>NEWS BYTES<<<

Intellisync Anywhere

Puma Technology has announced the development of Intellisync Anywhere, a server-based synchronization program for mobile users. Intellisync Anywhere provides remote and LAN-based synchronization of handheld devices with enterprise groupware applications. Intellisync Anywhere provides end-users with one-touch synchronization of their calendars, contacts, e-mail, to-do's, and memos stored on Microsoft Exchange or Lotus Notes servers. Intellisync Anywhere for Microsoft Exchange will initially support the Palm Computing platform products with expected availability in November, 1998, with Windows CE-based devices supported during the first quarter of 1999. Support for Lotus Notes is also expected to be available during the first quarter of 1999. The Intellisync Anywhere solution, which includes the Intellisync Anywhere Server, Desktop and Mobile Client, is priced on a per user basis varying with volume, with a $99 per user figure based on 100 users.

For more information, contact: Puma Technology; Phone: 800-774-7862; Fax: 408-433-2212; Web: http://www.pumatech.com

Delta Airlines offers discount to Windows CE Purchasers

If you bought any PC Companion powered by Microsoft Windows CE between October 1st and December 31, 1998; you will be eligible to receive a discount certificate from Delta Air Lines for up to $100 off a coach fare ticket, depending on value of purchase. Be sure to book your flight at 1(800) 221-1212. Offer good in the 50 United States and Canada only. More details available at www.microsoft.com/windowsce/delta.asp.

Developer looking for beta testers of SSH encryption client for Windows CE.

Mov Software is developing an SSH client that will allow a user to connect to a remote host using strong encryption. This encryption protects the confidentiality of all transmitted information. If you are interested in participating in the beta test of their product, please contact Mov Software; E-mail: movinfo@movsoftware.com; Web site: www.movsoftware.com.

Windows CE User Groups

If you're interested in creating a Handheld PC or Palm-size PC user group in your area, or want to find the closest existing user group, visit Microsoft's Mindshare Web site at www.microsoft.com/mindshare.

Easy Diary Online Calendar and Contact Service

Ruksun Software's Messaging Technologies Group recently announced the launch of Easy Diary, a free web-based calendar and scheduling service. Easy Diary provides an online tool for day planning, making and confirming appointments and meetings, as well as sending or receiving event reminders. Easy Diary has the following features:

- Contact book – easy to use and update
- Simplified Scheduling Permissions – lets you view and grant or deny scheduling permission for multiple contacts at once
- Time Zone Settings – lets you store entries in different time zones
- Power Search – quickly find contacts within your address book
- Alerts – informs you when you have been added to someone else's address book

For more information contact Ruksun's Easy Diary Web site: www.easydiary.com

AvantGo/Oracle alliance to develop mobile internet-based databases

AvantGo (www.avantgo.com) announced a strategic alliance with Oracle (www.oracle.com) to develop and distribute enterprise-ready mobile Internet-based applications on Windows CE and other handheld devices. The mobile devices will be able to access Oracle 8i databases using Oracle Lite, which stores user group, channel configuration and directory information. Starting with shipments this week, Oracle Lite is embedded in the AvantGo 2.0 mobile server.

GoldMine 5.0 to support for Windows CE

The next version of the popular desktop contact manager will include "built-in Windows CE integration." We have not gotten a clear answer on what that means, but assume that it will include being able to synchronize GoldMine 5.0 data with the Pocket Outlook applications. GoldMine 5.0 will also feature HTML/active Web pages, leads distribution, built-in Outlook integration, enhanced menu descriptions for improved usability, detailed administration logs and automated maintenance, and field-level security on each contact record, among other new features. GoldMine 5.0 is slated to ship in February 1999.

Motorola boosts CE processor support

Motorola has released an updated "PowerPC Supplement for Microsoft Platform Builder" tool kit to support development of Windows CE embedded systems solutions using its MPC8xx group of PowerPC chips. The new supplement for Platform Builder includes tools such as an Ethernet device driver, a user interface similar to that of Microsoft Internet Explorer and APIs for the communications module of the MPC8xx chips. Further information is available from the company's Web site. Web: www.mot.com/SPS/PowerPC/solutions/windowsce/windowsce.html

JORNADA!

A First Look at Hewlett-Packard's NEW Jornada 820 Handheld PC Pro

By Chris De Herrera

Hewlett-Packard Company was one of the first manufacturers to embrace Windows CE over two years ago. Their original HP 300LX series, and the subsequent color-screen HP 620LX and 660LX have all been very well-received by the handheld community. They have built their Windows CE success upon solid engineering of their Handheld PCs, and including a variety of useful add-on software with their units.

The new HP Jornada 820 Handheld PC Pro continues this Hewlett-Packard tradition.

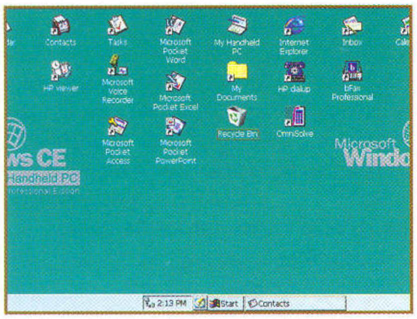
The Jornada 820 is Hewlett-Packard's first Windows CE Handheld PC, Professional Edition (H/PC Pro) system. It is one of the smallest of the announced H/PC Pro systems I've seen so far. It measures 9.5" long by 6.75"wide by 1.25" thick and weighs 2.5 pounds. The 256 color 8.2" VGA (640 x 480 CSTN) display is brightly backlit and easy to read (see Screen 1).

The Jornada has a near full-size keyboard with 75 keys (including on/off and 11 application launch keys, see Screen 2). Holding down the Fn key turns 10 of these keys into a number pad. This will come in handy for numeric data entry. The tab key is located where the caps lock is on a standard keyboard. This non-standard placement will slow touch typers down a little, until they get used to it.

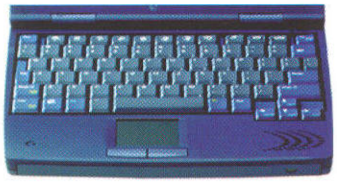
No touchscreen

A big difference between the Jornada and previous Windows CE Handheld PCs in that it does not have a

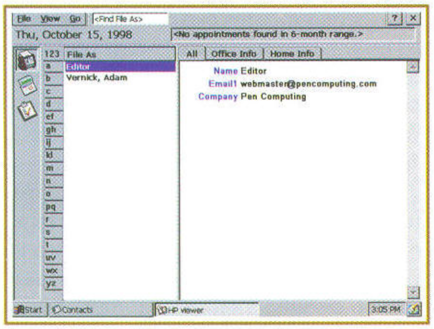
Chris De Herrera is a regular contributor to Handheld PC Magazine and is a Forum Consultant for America Online's Windows CE Forum (AOL members type keyword "Windows CE"). He is also a Microsoft Most Valuable Professional for Windows CE. Finally, he maintains one of the best Windows CE Websites, located at www.cewindows.net/. E-mail him at pdccrhisd@aol.com touchscreen. Instead, HP included a small mouse touchpad similar to those found on many notebook computers (see Screen 2). The pad measures 2.125" diagonal and is centered below the keyboard. In addition to the touch pad, Jornada users can add a mouse using the Jornada's USB port. The lack of a touchscreen makes the display brighter and easier to read. But it eliminates the ability to use the screen with handwriting recognition software. It may also indicate that HP is positioning the Jornada as a competitor in the sub-notebook niche. The Jornada includes the Voice Recorder application introduced in the previous generation of Handheld PCs, but there is no button on the outside of the case to access it. You must open the unit in order to play or record.


Contacts
Tasks
Microsoft Pocket Word
My Handheld PC
Internet Explorer
Inbox
HP viewer
Microsoft Voice Recorder
Microsoft Pocket Excel
My Documents
HP dialup
bFax Professional
Microsoft Pocket Access
Microsoft Pocket PowerPoint
Recycle Bin
OmniSolve
Windows CE
Handheld PC
Microsoft Windows
2:13 PM
Start
Contacts

Screen 1: The Jornada's 256 color, 8.2" display is bright and easy to read. Shown here is the Jornada's opening desktop screen. The Jornada has a standard 640x480 display, as do most other H/PC Pros.



Screen 2: The Jornada has a near full-size keyboard with an embedded number pad. The Jornada uses a mouse "touchpad," centered just below the keyboard, instead of the traditional H/PC touchscreen.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Office Info
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HP viewer
3:05 PM

Thu, October 15, 1998

<No appointments found in 6-month range.>

Editor

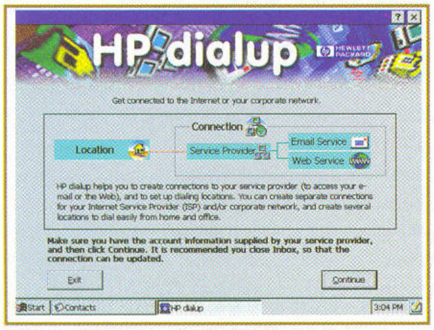
Vernick, Adam

Name Editor

Email1 webmaster@pencomputing.com

Company Pen Computing

Screen 3: The HP Jornada Viewer lets you display Pocket Outlook information quickly and easily, choosing as much, or little detail as you want. Shown here is Viewer displaying Contact information.


HP dialup
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?
×
Connection
Location
Service Provider
Email Service
Web Service
Exit
Continue
Start
Contacts
HP dialup
3:04 PM

Get connected to the Internet or your corporate network.

HP dialup helps you to create connections to your service provider (to access your e-mail or the Web), and to set up dialing locations. You can create separate connections for your Internet Service Provider (ISP) and/or corporate network, and create several locations to dial easily from home and office.

Make sure you have the account information supplied by your service provider, and then click Continue. It is recommended you close Inbox, so that the connection can be updated.

Screen 4: The Jornada's Dialup utility simplifies the process of creating a network connection.

HP included a standard VGA monitor port that is capable of dual-mode operation. Not only can you display PowerPoint presentations on an external monitor, but you can use HP's "Jornada Show" application to view any Jornada application, in real-time, on a VGA monitor. The Jornada comes with a USB (Universal Serial Bus) port, a feature new to Windows CE in the H/PC Pro edition. Unfortunately, Microsoft only included a mouse driver for this port (for the Microsoft Intellimouse V3.0 USB, or a compatible mouse). You will need to look for additional drivers if you want to use the USB port for other peripherals. The Jornada also includes a fast infrared (IrDA 1.1) port, a serial port, and a v.90 56k modem. The software modem extends battery life while minimizing the effect on the performance of the Jornada. To add additional peripherals and file storage, the Jornada has a type II PC Card and type II

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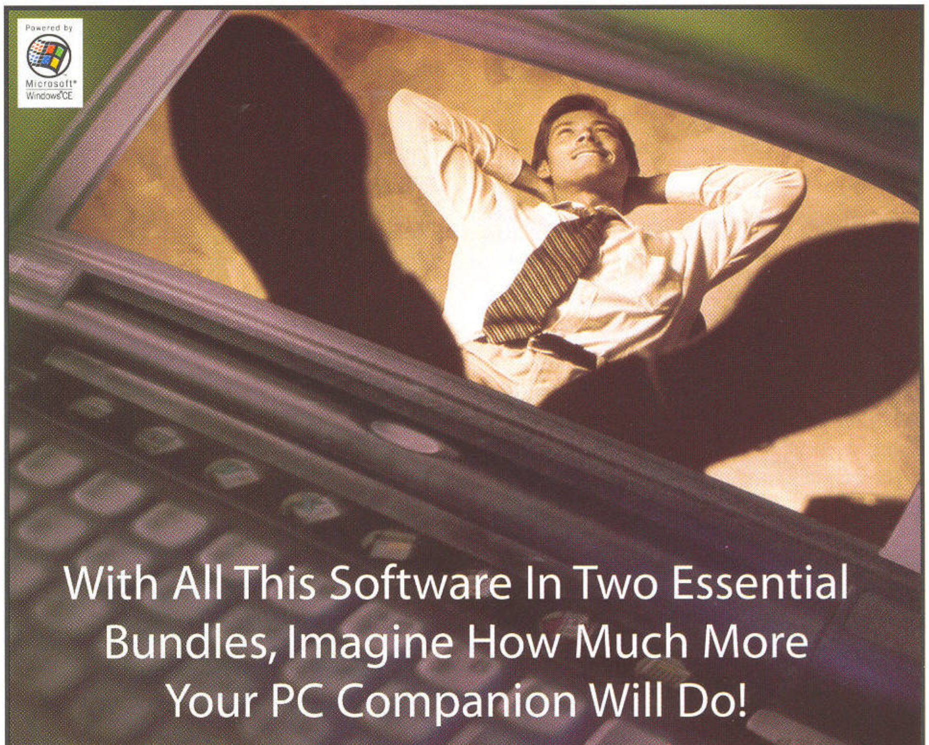
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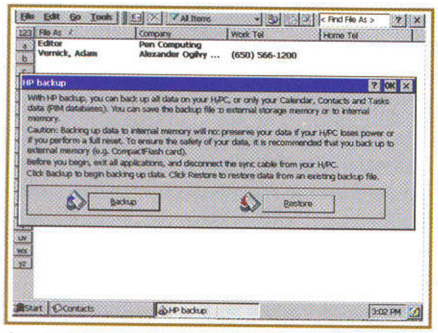

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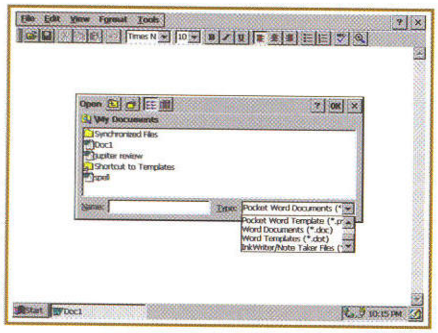
With HP backup, you can back up all data on your H/PC, or only your Calendar, Contacts and Tasks data (PIM databases). You can save the backup file to external storage memory or to internal memory.

Caution: Backing up data to internal memory will not preserve your data if your H/PC loses power or if you perform a full reset. To ensure the safety of your data, it is recommended that you back up to external memory (e.g. CompactFlash card).

Before you begin, exit all applications, and disconnect the sync cable from your H/PC.

Click Backup to begin backing up data. Click Restore to restore data from an existing backup file.

Screen 5: The Jornada's Backup utility lets you back up and restore as much, or as little of your H/PC Pro as you like, quickly and easily.



Screen 6: The Jornada and other H/PC Pros come with the ability to open and save Pocket Word and Pocket Excel documents in desktop PC Word and Excel formats. This will make it easier for travelers to send and receive documents.

CF+ CompactFlash slot (CF+ means that the Jornada support CompactFlash size I/O devices). Both of these slots have doors that cover the slots to keep them clean when they are empty.

With the standard lithium-ion rechargeable battery, the Jornada runs for approximately 10 hours. The optional extended-life battery is no larger than the standard battery, but lasts approximately 15 hours. The standard battery takes approximately two hours to charge. The Jornada uses an Intel StrongARM RISC CPU. It operates at a blazing 190 MHz, making it the fastest of the announced H/PC Pros. Since this CPU has not been supported in previous versions, few shareware, freeware and commercial applications are available. This will change since the latest versions of software development tools include compilers that support this CPU type. The Jornada comes standard with 16 MB of RAM and it is expandable to 32MB. The 16 MB ROM is user upgradeable.

Powerful software for the mobile professional

The Jornada comes with the standard H/PC Pro applications, including Pocket Word, Pocket Excel, Pocket Outlook (Calendar, Contacts, Tasks, Inbox), Pocket PowerPoint, Pocket Internet Explorer, Accessories (Calculator, World Clock, Terminal, Solitaire) and Voice Recorder. New to the applications Microsoft has built into the H/PC Pro are Pocket Access and InkWriter. We'll take a more detailed look at those applications in a later issue.

Hewlett-Packard has added an impressive lineup of software from independent vendors. The Jornada includes the following applications built into ROM:

➤ HP Jornada Viewer — lets you quickly display your Pocket Outlook Calendar, Contacts, and Tasks information (Screen 3). Viewer displays the information you choose in as much detail as you like, including detailed contact information, tasks and notes on a single screen, or all the appointments and tasks scheduled for a single day, a week, or up to 12 months at a time.

➤ HP Jornada Dialup — walks you through the process of creating a network connection, including setting up e-mail and Web service (Screen 4).

➤ HP Jornada Hot Keys — lets you reconfigure the Jornada's quick launch keys to start any application installed on the Jornada.

➤ HP Jornada Settings — lets you change or adjust important settings and check the status of available memory and battery power. It also lets you set the password delay feature for added security.

➤ HP Jornada Show — lets you display your HP Jornada screen image on a VGA-compatible monitor in real-time. Whenever you have a desktop monitor (or projector) available, you can connect it to the Jornada, for easier viewing.

➤ HP Jornada Backup — lets you back up Pocket Outlook data information to a PC Card or CompactFlash Card for secure storage (Screen 5). You can also back up data to a folder on your HP Jornada.

➤ LandWare's OmniSolve — a financial application designed for real estate, retail, and business professionals. OmniSolve employs a "form filling" metaphor to provide you with a powerful and easy-to-use problem-solving environment.

➤ bFAX Pro — lets you send, receive, and view faxes and attachments from your Jornada.

➤ bFIND — lets you search for a word or text string in any database, file, file name, or e-mail message stored on your HP Jornada.

➤ Proxim RangeLAN-2 — software driver that lets the Jornada access a RangeLAN-2 wireless network.

Also bundled on CD-ROM with the unit is HP TopTools Agent (providing system management for the DMI-compliant Jornada), TrueSync CE 2.0 (allowing the Jornada to synchronize with the REX and REX Pro PC Card organizer), Microsoft Java Virtual Machine, Citrix ICA client, and INSO file viewer. This suite of applications makes the Jornada a very competitive choice for corporate users who want to maximize their capabilities with Windows CE and their environment.

The H/PC Pro for corporate users

HP has done a great job of creating a device that has what the average corporate user wants – the ability to work with a VGA monitor, a nearly full-size keyboard, a fast 56k modem and USB port for enhanced connectivity. In addition, HP has bundled with the Jornada an excellent assortment of add-on software to make life easier for the user. The dial-up utility greatly simplifies the process of creating a network connection, and setting up e-mail and Web service via Ethernet, Proxim Wireless LAN, or dial-up connections. Once connected you can access a Citrix Winframe server, or a Windows NT Server.

Pocket Word and Excel on the new H/PC Pro can now open and save documents in the same format as the desktop versions (Screen 6). This makes it easier to read and respond to attachments when you're on the road. And the INSO File Viewer lets users read attachments in other formats (Word Perfect, Lotus 123, Quattro Pro, etc.). The only thing missing from the Jornada is a parallel port for direct printer connections. HP (and Microsoft) expects that most users will wait until they are back in the office to print out documents. Mobile users who must connect directly to a printer must use a slower IrDA port connection (if the printer has an IrDA port), or the Jornada's serial cable with a serial-to-parallel adapter to do this. It works, but can be as much as 1/5th the speed of a true parallel port.

Hewlett-Packard Jornada 820 — $999. HP includes a one-year parts-and-labor HP Customer Care standard warranty. Hewlett-Packard makes a version of the Jornada called the 820e for markets outside North America. The 820e does not include the 56k internal modem. The Jornada will be available through on-line sources and major computer stores. HP Jornada Website, www.hp.com/jornada/index.html

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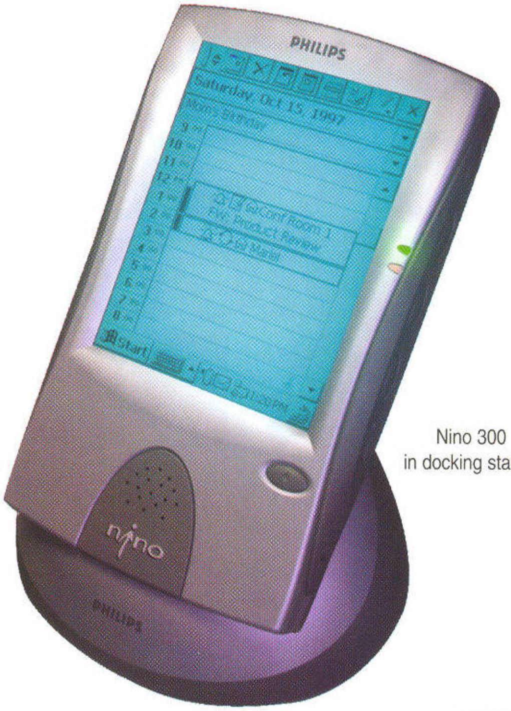
Philips Nino 300

Power, Style and Ergonomics

By Jason Perlow



Nino 300
in docking station

Many consumer electronics manufacturers develop "me too" products in an attempt to capitalize on the success of others and establish market share. Perhaps a more important influence on Palm-size PCs is the Windows CE operating system, which specifies the look of the user interface, the basic applications and utilities, the general size, shape, screen, input method of the device, and number and type of buttons.

Because they are so similar, the different Palm-size PCs tend to be viewed as "me-too" products. But in reality, manufacturers put a lot of attention on giving their Palm-size PC an edge over the others. This is readily apparent with the new Philips Nino 300 Palm-size PC. Instead of creating a "me too" machine, or even a "mine is different" device, Philips aimed at creating a "mine is better" Palm-size PC. To a great degree they succeeded.

Well-thought-out and superbly engineered

The Nino is the third Palm-size PC to hit the market, preceded by the Everex Freestyle and Casio Cassiopeia. But third out of the gate doesn't necessarily mean third across the finish line. Philips has developed a well thought out and superbly engineered product that will certainly give Casio and Everex a run for the money.

Ergonomics was obviously an important consideration in the Nino's design. The stylish, silver and dark gray Nino 300 measures 0.8 x 3.4 x 5.3 inches. This extra length makes the Nino a little more difficult to carry in your shirt pocket, but also makes it easier to hold, especially in a larger hand. Both sides of the Nino are padded with a rubber-like material that is soft to the touch and less slippery than metal or plastic. The Nino's tapered shape comfortably fits the contours of your hand.

The Nino sports a 75MHz 32-bit PR31700 processor (also used in the Philips Velo 500 H/PC). The Everex and Casio Palm-size PCs use 53MHz and 66MHz processors respectively. Menus pop up almost instantaneously and applications start and run very quickly, even when scrolling though long lists of contacts in Pocket Outlook. The Philips PR31700 processor in the Nino 300 also provides processing power for an internal 19.2Kbps soft-modem, which must be used with an external connector module, sold as an accessory. You have to be careful making performance judgements based on megahertz numbers, especially when the numbers are so close. But the Nino clearly has the snappiest performance of the three.

One-handed operation

The Nino and other Palm-size PCs are designed to hold and operate with one hand. For example, a right-handed person would hold the Nino in his or her left hand and access the scroll/action/exit buttons with the thumb, and the four application buttons with the index and forefingers. The right hand is free to use the stylus. The Nino's (and other Palm-size PC's) design favors right-handed users.

The Voice Record application is accessed via a button on the right hand side of the case. Press the button once to open the application or just hold down the button and speak to record a voice memo. The button is always exposed, even when the Nino is in its slipcase, making it easy to make a quick voice memo. The built-in speaker faces the front of the unit and produces loud and clear sounds.

Backlighting, battery life and more

The Nino's screen is very easy to read, even in bright sunlight. And should you need to adjust the screen contrast, Philips has conveniently placed a thumb wheel control on the lower right side of the case. The backlighting is bright and it makes it easy to see the screen in the dark. However, you should be aware that using backlighting on the Nino (or any Palm-size PC) drains the battery 10 to 15 times faster than normal. Use it when you need it, but don't overuse it. One of the nice things about the Nino is that it comes with a NiMH rechargeable battery. Slip it into its docking cradle at work or

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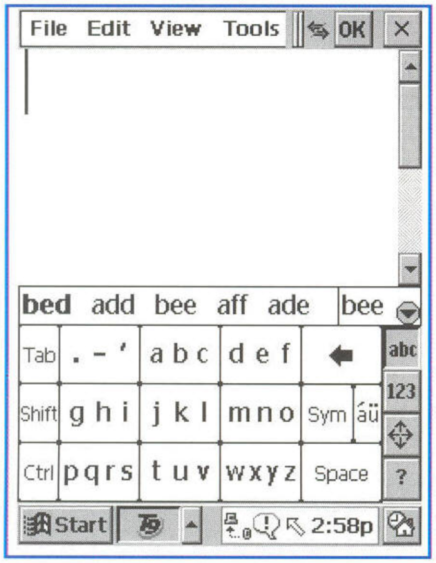

Screen 1: T9's large keypad makes it easy to enter characters into any application on the Nino. Tap on the appropriate keys and then select the correct word from the list above the keypad.

in the evening and you should never have to worry about running out of battery power. The Nino has two bright LED indicators that tell you when the unit is charging and when an appointment comes due.

Another nice touch is the cover to the CompactFlash slot, which slides open easily, but never completely detaches from the case. You won't lose this cover, but it is a little fragile, so be careful when you insert the CompactFlash card, and close the cover immediately. The Nino's CompactFlash slot lets you add memory, a LAN adapter, and other I/O devices. The Nino needed a "software update" before it would recognize any of the CompactFlash memory cards I tried with it (32 MB Kensington Technology card and an 8 MB SanDisk card). In neither case would the Nino recognize the card until we downloaded and installed a software update, available free of charge from the Nino website: nino.philips.com/support/updates.html. (The Web site also has two updates to the Nino documentation.) Download the file labeled "Philips Nino Software Update 1.0" to your desktop PC, unZIP it, connect the Nino to the desktop PC using Windows CE Services, and run the software update setup program.

T9 makes text input easier

The Nino has the standard Palm-size PC applications, including the built-in version of the Jot handwriting recognition program and a "soft keyboard." In addition, Philips has added a new input system called "T9" (Text on nine keys), developed by Tegic Communications (www.tegic.com). T9 displays a large, nine-key pad on the bottom half of the Nino's screen. Each key represents three, and sometimes four characters, similar to a phone's keypad (see Screen 1). As you tap the characters, T9 lists the different possible words at the top of its keypad. When you are finished entering characters, you tap on the desired word and it's entered into your application.

All Palm-size PCs come with word prediction capability. For example, you start entering the word "computer" using Jot or the built-in soft keyboard. After you enter a few letters a box will pop up with a list of possible words. T9 did not predict words based on entering just a few characters. You had to enter the entire word and then chose from the list.

The big plus with T9 is the size of the keypad. The keys are much bigger and easi-

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er to find that those on the soft keyboard. I found that with a little practice, I could enter short notes faster with T9 than I could with the soft keyboard or Jot. And because I was selecting words from a list, T9 almost completely eliminated spelling mistakes.

In addition to T9, the Nino comes with ART's Pocket Commander and SmARTwriter. Pocket Commander lets you use voice commands to start applications, open contacts, and more. It's easy to train the application to recognize your voice, but I found that the Nino responded slower when Pocket Commander was running in the background. SmARTwriter is another handwriting recognition program. Instead of having to change the way you write (as you do with Jot), a ten minute training session teaches SmARTwriter to recognize your printed handwriting. I found it to be less accurate than Calligrapher, the other handwriting recognition program for Windows CE. But SmARTwriter is already built in to the Nino and doesn't take up any of its limited file storage space. The Nino also comes with a simple expense manager application built in, good for tracking business expenses when travelling.

Philips has put together a stylish and fast product with a lot of nice extras. They also offer a nice line of accessories for the Nino, including an attachable modem, Nino-to-PC connectivity cable, extra docking station, compact AC adapter, car charger, rechargeable battery pack, SanDisk CompactFlash memory cards (8 and 15 MB), and a traveling case.

Once Philips gets past some initial distribution problems, the Nino will certainly give the other Palm-size PCs very serious competition. For now, I have to send the review unit back to Philips, and I'm sad to see it go. ■

Philips Nino 300 (4 MB RAM)— $399
Philips Nino 300 (8 MB RAM—charging/data cradle) — $459

Philips products and accessories are available online through the Nino Store at nino.philips.com/index.html. They are also available at discount computer retailers, including: Best Buy, CompUSA, Office Depot, Staples, and more. A complete list of retailers carrying the Nino and accessories is available at: nino.philips.com/dealer/index.html

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Create your own "Event sounds"

The Voice Recorder application on the Nino (or any PC Companion) saves its recordings as standard .WAV files. This means that you can use it to create your own "interesting" sound files, which you can then use to replace the "event sounds" on your Nino (e.g., the sounds that remind you when you press a button, tap on the screen, etc.). Follow these steps:

1. Make your voice recording.

If it's a simple voice message, hold the Nino about 12" in front or your mouth, hold down the record button and speak clearly (but not overly loud) into the microphone below the touch screen. When you're finished, release the button and play back the recording to make sure it's what you want. You can do the same to record music or a spoken phrase off of your TV or stereo. Voice Recorder will give the new sound file a name (i.e. "Recording1" or "Recording2"). From the File menu you can select Rename and change the name to something more descriptive of the sound. You can also download .WAV files from the Internet and transfer them to your Nino using Windows CE Services.

2. Transfer the .WAV file to the \Windows\ directory on the Nino.

The easiest way to do this is to connect the Nino to your desktop PC and activate Windows CE Services. You can use the Mobile Devices' "Explore" option, browse the Nino's directories and move .WAV files to the \Windows\ directory. You can also use Explore to move .WAV files from the desktop PC to the Palm-size PC. The procedure works with all Palm-size PCs and H/PCs.

3. Open the Volume & Sounds utility and select the desired sound.

From the Start menu select Settings and then Volume & Sounds. Then follow these steps:

A. In the Volume & Sounds Properties screen, select the Sounds tab.

B. From the Event name list, select (tap once on) the event that you want to associate the new sound with (i.e., "Close Program" or "Menu Popup").

C. From the "Event sound" dropdown list, select (tap once on) the name of the new sound. You may want to tap the "Preview" button to hear the sound. (H/PC users can select a "Browse" option that lets them look through the H/PCs directories for the .WAV file.)

D. When you are finished configuring your Event sounds, tap on OK to complete the process.

The Philips Nino supports 8, 11 and 22 KHz .WAV file recordings. The Casio and Everex support 8 and 11 KHz recordings. Generally speaking, the higher the sampling rate, the higher the quality of the recording, and the larger the sound files. A quick, subjective test indicated that the 22 KHz recordings were noticeably clearer than the 8 KHz recrodings, and a little better than the 11 KHz recrodings. To change the KHz settings, open Voice Recorder, tap on the Tools menu and select the Recording Format option.

You can also download .WAV files from the Internet and use them for Event sounds or play them on the Nino using the Voice Recorder. Remember that the .WAV files on PCs can be sampled significantly higher than 22 Khz. You may have to "resample" the higher fidelity sounds with one of a number of shareware sound manipulator programs available for Windows 95.

Handheld PC Pro leads COMDEX EXPLOSION of Windows CE products!

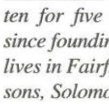
By Hal Goldstein

COMDEX technology's main event

Microsoft works hard to get its products established in the marketplace early on and then perfects them in subsequent releases. Conventional wisdom holds that Microsoft "gets it right" in about the third version of a software program. Therefore, there was some apprehension when Microsoft decided to name their third iteration of the Windows CE operating system version 2.11, instead of 3.0. However, after visiting booth after booth of Windows CE software and hardware at Comdex '98, I am convinced that if Windows CE hasn't fully arrived, it's pretty darn close.

H/PC Pro instead of a Windows 95/98 laptop?

The big Windows CE story at COMDEX, the annual 200,000-person Las Vegas computer show, was the Handheld PC Pro. **Hewlett-Packard** (www.hp.com/handheld), **NEC** (www.nec-computers.com), **LG Electronics** (www.lgphenom.com), **Hitachi** (www.hitachi-ce.com), **Sharp** (www.sharp-usa.com) and **Vadem** (www.vadem.com) showed versions of the H/PC Pro with full screens, half screens, and movable screens. For example, the *HP Jornada* looks like a small notebook computer with touch pad for pointing (in place of a touchscreen), full color VGA LCD, and touch-typeable keyboard. It comes with a price tag of close to $1000.



Hal Goldstein (hal@thaddeus.com) is Publisher and Executive Editor of Handheld PC Magazine *and president of Thaddeus Computing. He has published, edited, and written for five magazines on portable computing since founding Thaddeus Computing in 1985. He lives in Fairfield, Iowa with his wife, Rita, and his sons, Solomon and Thaddeus.*

The obvious question is why not buy a Windows 95 laptop for a few hundred dollars more? Microsoft and the various H/PC Pro manufacturers need to effectively communicate the answer to this question if the Handheld PC Pro (and Windows CE) is to succeed.Here are four answers:

1. Battery life: H/PC Pros get from 8 to 15 hours of use on fully-charged batteries, compared to around 2 hours for laptop computers.
2. Instant on/off: Press the Power on button and the H/PC Pro is ready to use. There is no long boot-up process, and you're right back where you were when you last pressed off.
3. Built-in applications: E-mail, Internet, PIM, word processing, spreadsheet, presentation, and database software is built-in and ready to go.
4. Low maintenance and total cost of ownership: Perhaps the most important reason to consider using an H/PC Pro instead of a laptop is that its applications just work, without all the complexities and pitfalls of Windows 98. Everything is there, built-in and ready to go. The MIS department doesn't have to spend a lot of time installing software (or software upgrades).

Whichever vendor can do the best job of educating the public of these benefits will be in the strongest position to sell its product. However, educated consumers, such as *Handheld PC Magazine* readers, will want to consider the significant differences in Handheld PC Pros before choosing.

Differences between H/PC Pros

First, let's consider screens. NEC, Hitachi, and LG Electronics offer half-screen as well as full-screen solutions. A half-screen device gives the user the smallest, lightest, touch-typeable machine. On the other hand, a full-screen H/PC Pro provides more visual real estate to display data. In addition, it looks more like a laptop and less like a toy. Vadem and Sharp offer a clever third alternative, an H/PC Pro with a moveable screen. Use it like a tablet to take notes, or lift the screen up to uncover the keyboard.

Vadem
Clio H/PC Pro

New to the H/PC Pro is the fact that not all devices come with touchscreens. For example, the *HP Jornada* comes with a touchpad instead. I missed the touchscreen at first – I like using my finger as a pointing device and I have never gotten used to laptop touchpads. However, touchscreen technology requires an extra layer of film built into the screen. HP chose to go without the touchscreen to give the display a crisper, clearer look and improve battery life. And speaking of batteries, most of the H/PC Pros use special lithium-ion rechargeable batteries to extend usage. I wish, in a pinch, they could also use regular alkalines or at longer lasting lithium Energizers.

Another differentiating factor between the different H/PC Pro's are ports and slots. All Pro's have infrared and serial ports for data synchronization and file transfer. All come with PC Card and/or CompactFlash slots for added file storage capability and I/O options. Some also come with a Universal Serial Bus (USB) port, parallel and VGA out ports. It may not matter which ports or slots an H/PC Pro has because in the coming months more and more peripherals (LAN access adapters, wireless and land modems, mice, printers, SCSI devices) will be available with USB, Infrared, CompactFlash, or PCMCIA connection options.

Palm-size and smaller Handheld PC's

Casio (www.casio-usa.com), **Everex** (freestyle.everex.com/), **Philips** (nino.philips.com/index.html), and **Uniden** (www.uniden.com/) showed their Palm-size PCs. The new Uniden unit includes a built-in 28.8 kbps internal modem. There was a notable lack of emphasis on the middle-sized Handheld PCs. HP, Sharp, and Philips did display these pocket-sized units with keyboard, but you almost had to seek them out.

Is H/PC the answer for your non-technical friends?

How many times have you been asked by your non-technical friends what computer should they buy? Most would-be users want e-mail and Internet capability. Maybe they also want to do some light word processing and personal finance management. They don't really want to devote a desk or a room to a computer. And they certainly do not want to struggle learning to use, and fixing their Windows 98 computer. They want to be able to press a button and start working. It seems to me a $900-$1000 Windows CE Handheld PC, perhaps with a printer and a CompactFlash card, is an excellent choice for the average user.

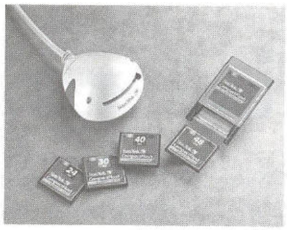
Also, from the very beginning, Microsoft referred to Windows CE Handhelds as "PC Companions." Fast and easy data synchronization between PC Companions and desktop PCs or LANs has been one of Windows CE's strongest virtues. This strategy targets the business desktop user. However, H/PC Pros might be a great boon for the average user. Windows CE manufacturers need to educate the average consumer about the virtues of this capability, or they'll miss a huge market.

Windows CE products from independent vendors

There was more to see than the Handheld and Palm-size PCs. There were an amazing number of Windows CE-related products being exhibited. Microsoft, Sharp, Casio, HP, Philips, LG all had "partners" in their booths showing off their "Windows CE solutions." What follows is a brief roundup of the Windows CE products displayed at COMDEX. (Advanced apologies to the Windows CE vendors I missed.)

PC Cards and CompactFlash Cards

All PC Companions can accept a CompactFlash and/or a PC Card. Independent vendors are using this capability to provide a variety of memory and I/O solutions for PC Companion users.



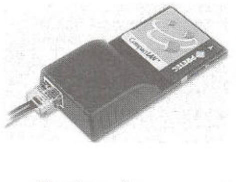
Sandisk ImageMate CompactFlash reader

Sandisk (www.sandisk.com), the market leader in Flash storage products, introduced 64, 80, 96, and 160 MB *CompactFlash* memory cards. They also showed *ImageMate*, a CompactFlash reader that can attach to a Mac or PC using a parallel-port or USB connector. This makes it possible to swap PC and CF cards between a desktop and PC Companion.

IBM mechanical Microdrive in CompactFlash format

Iomega (www.iomega.com) and **IBM** (www.ibm.com/storage/microdrive) showed novel data storage solutions. Iomega's *Clik! Drive* connects to a PC Companion or desktop and reads a tiny $10, 40MB Clik! Disk. PC Card and built-in versions of this drive may also be available. IBM teased users with a promise of a 340MB shock resistant, mechanical drive that slips into a CompactFlash slot. The *Microdrive* will be priced around $1 per MB. No shipping date given.

I/O (input/output) cards in CompactFlash and PC Cards formats were also plentiful at COMDEX. I saw modems; wireless transmitters/receivers; LAN adapters; USB, parallel, serial, and SCSI port adapters, and more. You'll be able to use these cards to connect your H/PC or Palm-size PC to just about anything, from a CD-ROM, to a wireless network.



Pretec Compact Modem

Pretec (www.pretec.com) offered a *Compact Windows CE Mobile Peripherals I/O Series* in addition to its line of CompactFlash storage cards. Like CompactFlash cards, these cards can use an inexpensive adapter to slip into a standard PC card slot. Pretec is shipping its 56k *CompactModem*, and a 10BaseT and 10BaseT/2 *CompactLAN adapter*. Ready in the first quarter 1999 will be Pretec's *CompactParallel* and *CompactSerial* port adapters. They will release *CompactGPS*, *CompactSSFDC*, *CompactSCAN*, and *CompactIRDA* adapters in the second quarter of 1999.

Adaptec (www.adaptec.com/portables) showed a low-powered *SlimSCI* 1450 PC Card to SCSI adapter with a Windows CE software driver which will ship in January.

Ambicom (www.ambicom.com) showed 10 Mbps and 10/100 Mbps *Ethernet PC Cards* for Windows CE devices, plus a Mbps Ethernet adapter in ConpactFlash format.

Accessories make life easier

Road Warrior International (www.warrior.com) offers telephone and electrical adapters for world travelers. If you and your PC Companion travel to different parts of the world, check out their Website.

Westtek (www.westtek.com) provides PC Companion users with *JetCEt*, a program that adds color printer drivers for HP, Epson, Cannon, Citizen, PostScript Level 2, and Pentax printers. The software works nicely with a Ps/PC or H/PC using the IrDA port. Westtek demonstrated their printer drivers on an H/PC connected to a **Pentax** (www.pentaxtech.com) *PocketJetII*, an ultraportable printer, hardly bigger than a pencil box, that prints up to 3 pages per minute. It weights just over one pound, including battery.

You collect a lot of business cards at a show like COMDEX. Entering all of this information in Contacts can be very time consuming. *CardSan Executive* can save you that time. This small scanner from **Corex Technologies** (www.cardscan.com) connects to a desktop PC's parallel port (a pass-through port for your printer is included). Run the CardScan application on your desktop and it reads the business card and updates your desktop PC's Contacts list. Once you've scanned the cards, you can easily synchronize with your H/PC to update your Contact information.

Concept Kitchen (www.conceptkitchen.com) has several useful PC Companion accessories, including their *Karma Cloth* to clean you screen, a *PenCap Stylus* for pointing or writing, and *a Fingertip Stylus* for those who prefer taping the screen with their finger. They also announced *Small Talk*, a PC Companion with phrasebook for six languages.

Database Solutions

The ability to take your information with you wherever you go is a big goal of

Windows CE. The database solutions presented at COMDEX advance this goal.

Sybase (www.sybase.com) announced that its *Sybase Adaptive Server Anywhere 6.0* supports Windows CE, providing a relational database for H/PCs.

Oracle (www.oracle.com/mobile) was promoting *Oracle Lite*, an object-relational client database for enterprise applications. Oracle Lite runs on H/PC's and synchronizes with Oracle database servers.

RW Information Technologies' RW3 (www.rw3.com) provides a Windows CE sales force automation solution that gives sales reps the ability to capture and execute key sales and merchandising objectives in real time.

Jetform (www.jetform.com) was demonstrating *JetForm Filler.* You design data collection "forms" on your desktop, and download them to your PC Companion for quick, easy and accurate data collection. Users can download JetForm forms from their desktop and synchronize completed form files with their desktop or server.

Connectivity the key

H/PCs and Palm-size PCs were designed as "PC Companions" and their ability to connect to and synchronize with desktop PCs and networks is vital. In addition to Microsoft's Windows CE Services, products from a number of independent vendors enhance connectivity.

We have heard a lot of positive comments from corporate users of **River Run** (www.riverun.com) connectivity solutions. *River Run MobileSuite* is a complete solution for remote access from Windows CE-based PC Companions to corporate e-mail, calendar, and databases with access to Microsoft Exchange, Lotus Notes, cc:Mail, Novell GroupWise, and Microsoft Mail.

Futuresoft (www.futuresoft.com) has developed the *DynaComm Connectivity Series* of terminal emulators. This "universal terminal" provides connectivity to a variety of host systems.

Infowave Wireless Messaging (www .infowave.net) demonstrated *Infowave Office Enabler,* a client/server solution that works with Microsoft Exchange. Infowave Office Enabler lets users wirelessly access their e-mail from an H/PC.

Extended Systems (www.extendedsystems.com) showed the *Jeteye PC,* an IrDA adapter that connects to a desktop PC and allows IR synchronization between the desktop and PC Companion. Extended Systems was also showing *Harmony '98*, which provides very fast synchronization between PC Companions and desktop PIMs like Lotus Notes, Microsoft Exchange, Lotus Organizer, ACT!, Outlook and Goldmine.

Puma Technology's (www.pumatech. com) *Intellisync* provide synchronization, with full conflict resolution, between PC Companions and desktop PIMs like ACT!, Groupwise, Lotus Notes, and others. Puma's *IntelliSync Anywhere for Microsoft Exchange* provides secure remote dial-up access, and LAN-based synchronization. Puma expects it to ship in the first half of 1999.

Voice and Pen Recognition

Many H/PC Pros come with touchscreens, and handwriting recognition programs are still important. And voice recognition becomes even more important for those without a touchscreen.

Advanced Recognition Technologies' (www.artcomp.com) award winning *ART Recognition* lets you to train your H/PC to recognize your voice and handwriting. Macros let you assign a series of characters to a voice command or written symbol. For example, you can type out your name, address and phone number by writing a single symbol. Or you can open an individuals contact information with a voice command. *ART Recognition* processes a word rather than a letter at a time, which can make for speedy input.

CIC (www.cic.com) offers *Jot Pro* and *QuickNotes* as a handwriting recognition solution. *Jot Pro* is an upgrade (more room to write, macro editor) for the built-in Palm-size PC version. *QuickNotes* lets you capture handwritten notes and attach voice memos while automatically compressing notes to save memory.

Paragraph (www.paragraph.com) is now a division of the H/PC Pro manufacturer **Vadem**. They offer *CalliGrapher,* another powerful handwriting recognition solution. Among other features, *CalliGrapher* can translate script into text.

Many more useful programs for Windows CE users

Here are a few more applications and utilities presented at COMDEX.

On the Go Software (www.onthego software.com) announced that in addition to *Quicken ExpensAble* for Windows CE, they will produce a Windows CE version of *Pocket Quicken* – great for tracking personal checks and credit card purchases as you make them.

Digital cameras make a good companion for H/PCs as they often can share pictures. **Sierra Imaging's** (www.sierraimaging.com) *Image Expert CE* allows the H/PC user to download, view, annotate, and e-mail digital images directly.

bSquare (www.bsquare.com) a leader in developing Windows CE software, has several suites of utilities for Palm-size and Handheld PCs. *bUSEFUL* includes 12 utilities including an HTML editor, a backup program, a list manager, and a global search utility. *bPRODUCTIVE* lets you fax, print, track expenses, read Internet newsgroups and more.

CasioSoft (www.casiosoft.com) a division of Casio announced three "Business Tools for Windows CE". *CSI Project* is a mobile companion to Microsoft Project. *CSI Outliner* is a powerful outliner and list manager that lets you rearrange topics easily, and bring new structure to your ideas. *CSI PowerPack* consists of six utilities including a file manager, task switcher, zoom, image viewer, and screen capture. Its includes a utility that lets you enter data directly into your PC companion from your desktop's keyboard. For a limited time at the CasioSoft web site, you can download a free, useful voice calendar.

Finally, one of the most prolific and early writers of freeware and shareware for Windows CE is **Panutat Tejasen** (a.k.a. "Jimmy") (www.jimmy.com). His products are distributed by **Surerange Analysis** (www.surerange.com) and include a wonderful collection of games (*SolitarePack, Planetoid, WarriorCE*, and many more). More serious Surerange products include a *Pocket Spreadsheet for Palm-size PCs, Pocket French, German, and Spanish, Pocket Thesaurus, Pocket Solver*, and more.

Bill Gates, ClearType, and the future of Windows CE

A final note of interest. In his keynote address, Bill Gates stated that Microsoft R&D has developed *ClearType*, a new font technology. Originally designed for use in electronic books, *ClearType* triples the resolution of font display on existing LCD technology. Gates' intention is to include this new breakthrough in new versions of Microsoft's Windows operating system. This should include Windows CE. Sounds like a treat for tired, aging eyes.

This article, with live links, will also be posted on our Web site (www.hpcmag.com). Go there if you wish to use it as a launching pad to explore these products in greater depth.

Rx for Success

"My HP 660LX: the perfect Physician's Assistant!"

HP Color Palmtop PC
Takes You Places!

By Edward M. Zabrek, M.D., F.A.C.O.G.

6:00 a.m.

The alarm on my "physician's assistant," the Hewlett-Packard HP 660LX Palmtop PC, is chirping politely. I'm on-call tonight and managed to get another hour's sleep after my patient's baby came at 4:30 a.m. I pull out my 660LX and realize that I will not have the luxury of any more sleep. My Calendar schedule appearing on the screen of my 660LX tells me that I need to be in the operating room in less than an hour, and my afternoon is jam packed with patients.

7:00 a.m.

After my shower, I greet my patient in the holding area of the operating room. I pull up his patient history in Pocket Word and quickly review it. Everything is set to go.

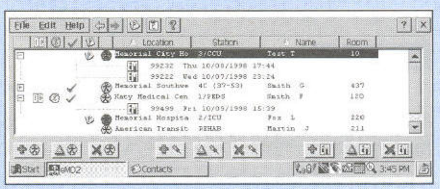
7:10 a.m.

Waiting in the physicians' lounge, I review the day's schedule using Pocket On-Schedule (Odyssey Computing, www.odysseyinc.com). I use Pocket On-Schedule (see Screen 3) because it allows me to keep an unlimited number of user-definable contact, calendar, and tasks lists. This feature alone greatly enhances the functionality of my H/PC. My surgical assistant has not yet arrived, and if he's late, it will really throw off my entire schedule. I quickly pull up his car phone number from my Contact Manager, call him and find out that he is only 5 minutes from the hospital. (Whew!) By the time I have reviewed and added to my "tasks " for the day, my assistant rolls through the door

Ed (stork@flash.net) is a regular contributor to (and has recently been named Medical Editor of) Handheld PC Magazine. *He is a practicing obstetrician-gynecologist in Houston, Texas, and the chief technology correspondent for OBGYN.NET (www.obgyn. net), a Web site for obstetricians, gynecologists, and related industry persons. His ultimate goal is to create the perfect electronic medical record with a major focus on using the Handheld PC to do it.*

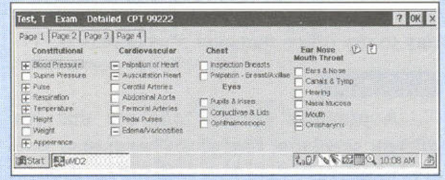
e/MD^{2}® Portable Coding Software

Based on a Health and Human Services audit of the medical industry in 1996, which alleged over $23 billion per year in over billing by medical professionals, the Health Care Finance Administration (HCFA) released documentation guidelines for medical record keeping in 1997. These were intended to provide structure and consistency to the industry's chaotic documentation/billing system, partially by specifying standardized service codes ("CPT" or "E&M" codes). They also added an estimated 140 to 200 minutes a day per 20 patient visits to document patient visits with the appropriate codes, leading many medical professionals to suspect that the cure was worse than the original disease. Fortunately, I discovered a program for my H/PC, called e/MD^2. It has become an invaluable tool that guides me through the labyrinth of red tape that was required of all practicing physicians by these regulations.



Location	Station	Name	Room
Memorial City Ho	3/CCU	Test T	10
99232 Thu 10/08/1998 17:44			
99222 Wed 10/07/1998 23:24			
Memorial Southwe	4C (37-53)	Smith G	437
Katy Medical Cen	1/PEDS	Smith F	120
99499 Fri 10/09/1998 15:39			
Memorial Hospita	2/ICU	Fox L	220
American Transit	REHAB	Martin J	211

Screen 1: The e/MD^2 main screen let the physician select a patient record or create a new one, and begin the process of creating a New Evaluation and Management Charge.



Test, T Exam Detailed CPT 99222

Constitutional
- ⊞ Blood Pressure
- ☐ Supine Pressure
- ⊞ Pulse
- ⊞ Respiration
- ⊞ Temperature
- ☐ Height
- ☐ Weight
- ⊞ Appearance

Cardiovascular
- ⊟ Palpation of Heart
- ⊟ Auscultation Heart
- ☐ Carotid Arteries
- ☐ Abdominal Aorta
- ☐ Femoral Arteries
- ☐ Pedal Pulses
- ⊟ Edema/Varicosities

Chest
- ☐ Inspection Breasts
- ☐ Palpation - Breast/Axillae

Eyes
- ☐ Pupils & Irises
- ☐ Conjuctivae & Lids
- ☐ Ophthalmoscopic

Ear Nose Mouth Throat
- ☐ Ears & Nose
- ☐ Canals & Tymp
- ☐ Hearing
- ☐ Nasal Mucosa
- ⊟ Mouth
- ⊟ Oropharynx

Screen 2: The standardized data entry screens in e/MD^2 walk the physician through collecting a patient's initial history, examining the patient (shown here), and the medical decision-making process.

The e/MD^2 Portable Coding Software was developed for the Windows CE Handheld PC by Rensimer Enterprises, Ltd., of Houston, Texas (www.emd2.com). It guides the practitioner through a series of steps that helps make sure he or she is in compliance with the new federal healthcare regulations. This is important because innocent errors of omission, or a lack of proper knowledge of these new laws could lead to charges of fraudulent billing practices that could result in fines of $10,000.00 per infraction, and even jail time for the unsuspecting doctor.

How e/MD^2 works

Step by step, a physician or administrative assistant enters the basic details about a procedure into e/MD^2. The program then "intelligently builds" a CPT or E&M service code for the procedure, based on the Documentation Guidelines for that code.

e/MD^2 is extremely user-friendly. The physician selects an existing patient from the opening screen, or creates a new patient record (see Screen 1). From the patient screen, the physician can create a note, or prepare to enter a "New Evaluation and Management Charge" using E&M Documentation Guidelines.

The physician then uses a stylus on the H/PC's touch-screen interface to select a service category from a drop-down menu based on the AMA's manual. From there the physician taps the bullet points from the '97 Documentation Guidelines within the three elements that comprise a charge code: History, Exam, and Medical Decision-Making (see Screen 2). Instantly, the program calculates the appropriate code for that patient encounter. When completed, the code and its time and date of entry can be viewed on the H/PC's screen, listing the entire patient service.

The program flows logically through a patient encounter. Clinical notes can be quickly jotted through handwriting recognition software. Both the Clinical Note and the Patient Note functionality can be accessed at any point in the program. Once the patient encounter is complete e/MD^2 generates a CPT billing code which can later be uploaded to the computer base station at the office for quick, error-free charges.

Although it's not necessary for a physician to know an individual charge code while he or she is with a patient, the codes help to accurately track medical services given. This would make it easier for the medical profession to spot trends and correct problems in patient care.

If a program such as e/MD^2 were universally adopted, physicians, medical, government and insurance organizations would have a means for performing meaningful outcomes analysis, standardization of medical care practices, and ultimately improving the quality of medical care.

More information is available at the e/MD^2 Web site at www.emd2.com.

and we are ready to go.

11:53 a.m.

The surgery is completed without a hitch, and I have time for lunch before my afternoon appointments. I meet a new physician at lunch today, and scribbled down her contact information on a paper towel (I left my 660LX in my briefcase – I should know better).

1:30 p.m.

Back at the office, I have a few minutes to add her name to my "Doctors Contacts" list in Pocket On-Schedule. I also quickly check e/MD^2® for CE, a physicians coding program that guides me through the procedures for properly documenting a procedure and billing a patient (see sidebar "e/MD^2 Portable Coding Software"). I also use Voice Record to dictate a report on how the morning's surgery went.

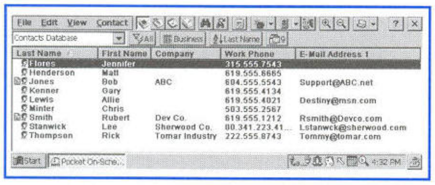
1:37 p.m.

Time to backup my 660LX! Whenever I make additions or corrections to the personal or medical information on my "assistant," I back it up using DB-Backup (purchase through Mobilesoft at www.mobilesoft.com; demo available at members.aol.com/pdcjohns/).

I used to only perform daily backups, but several months ago I lost a couple of hours of inputted data due to a lockup of my H/PC. (I still can't tell you how I crashed it, but I don't every want to be caught again without a current backup.) With new data input into the On-Schedule fields, and the medical data input into e/MD^2 , the small amount of time its takes to backup can save me hours of time and frustration in searching for potentially unrecoverable information.

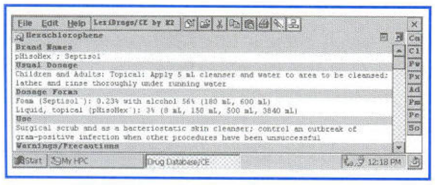
2:00 p.m.

I interview a new patient from Mexico. This patient has chronic pain in her belly.



Last Name	First Name	Company	Work Phone	E-Mail Address 1
Flores	Jennifer		315.555.7543	
Henderson	Matt		619.555.6665	
Jones	Bob	ABC	604.555.5543	Support@ABC.net
Kenner	Gary		619.555.4134	
Lewis	Allie		619.555.4021	Destiny@msn.com
Minter	Chris		503.555.2567	
Smith	Rubert	Dev Co.	619.555.1212	Rsmith@Devco.com
Stanwick	Lee	Sherwood Co.	00.341.223.41...	Lstanwck@sherwood.com
Thompson	Rick	Tomar Industry	222.555.8743	Tommy@tomar.com

Screen 3: I use Odyssey Computing's Pocket On-Schedule to track contact information (shown here) and appointments on my Handheld PC.



Hexachlorophene

Brand Names

pHisoHex ; Septisol

Usual Dosage

Children and Adults: Topical: Apply 5 mL cleanser and water to area to be cleansed: lather and rinse thoroughly under running water

Dosage Forms

Foam (Septisol): 0.23% with alcohol 56% (180 mL, 600 mL)

Liquid, topical (pHisoHex): 3% (8 mL, 150 mL, 500 mL, 3840 mL)

Use

Surgical scrub and as a bacteriostatic skin cleanser; control an outbreak of gram-positive infection when other procedures have been unsuccessful

Warnings/Precautions

Screen 4: Lexidrugs CE adds a comprehensive drug database to my H/PC, letting me check dosage, contraindications, interactions and more; any time, any place.

She is allergic to numerous foreign medications (many of which I have never heard of). I open my Lexidrugs CE program (available from K2 Consultants, Inc.; www.skyscape.com/k2). Lexidrugs CE provides comprehensive information on over 5200 drugs, giving both generic and brand names. The information for each drug includes information on use, dosage, contraindications, interactions, pregnancy implications, nursing instructions, therapeutic category, etc. I quickly search for these drugs and document the U.S. equivalent in her chart. I also input data into the e/MD^2 program, creating a "problem list" for the patient, and generating the appropriate information for my office manager to perform her job (Screen 4).

2:50 p.m.

Having completed the interview I once again backup my data. I am now ready to see my regular patients. I use the e/MD^2 to input the names of the patients I'll see. e/MD^2 presents me with pertinent information about each patient I list, highlighting previous problems. I enter notes about each appointment into e/MD^2. The coding data from these entries will be downloaded at the end of the day to my office manager's workstation.

3:20 p.m.

A pregnant patient tells me that her allergy specialist has given her a new prescription, one that I'm unfamiliar with. I look it up in Lexidrugs CE, searching for the pregnancy safety profile. I find that the drug is contraindicated for pregnant women (a big no-no). I phone her allergist and he suggested an alternative medication.

3:40 p.m.

Ah, a rare break in my schedule; a good time to connect up to my Internet Service Provider and check my e-mail. I download my e-mail to my 660LX and take a quick look at it. There's nothing needing immediate attention, which is good because my nurse has just informed me that I now have four patients waiting and I should pick up the pace. (So much for the break in my schedule!)

5:00 p.m.

Time to go home, except that I still have three patients to see. It was a long day, following a long night, but I'm not on call tonight. I finish up, download the new patient data to my office manager's desktop, do one more DB-Backup, and I'm ready to go home and get some …

6:15 p.m.

BEEP—BEEP—BEEP—BEEP!!!! It's Labor and Delivery informing me that Mrs. Jones is in labor. I pick up some dinner and go back to the hospital's sleep room to grab a bite to eat. The sleep room does not have a TV or radio, so while I wait for Mrs. Jones (nature takes its time with these things) I connect my 660LX to the Internet and, using Pocket Internet Explorer to browse the Web, I catch up on all the important news of the world (90% of which seems to be about a couple named "Bill and Monica").

My HP 660LX keeps me organized and on time, provides me with vital professional information, and lets me keep up with our national soap opera. What more can I ask of a good physician's assistant. ■

Keep Patient Records on an H/PC with pocketCHART

By Timothy W. Urell, MA, DO (TimUrell@compuserve.com)

Physicians spend as much as 40% of their time producing routine notes and keeping up with the ever increasing demand for paperwork from the government and insurance providers. All things considered, the development of computerized "Electronic Medical Record" (EMR) systems was inevitable.

Such a system would have to be easy to use and highly portable. Laptop computers have been tried, but they are too cumbersome and their batteries simply do not last long enough to be truly useful to a physician.

EMR solution: H/PCs and pocketCHART

Handheld PCs fit easily in a physician's pocket. Their battery life is long enough for most uses, and spare batteries are easy to carry along. The built-in software provides a Contacts database and Calendar for appointments, as well as Pocket Word for memos. Add to these basic features a program called pocketCHART and you have a personal organizer and full-featured electronic medical record keeper in one package.

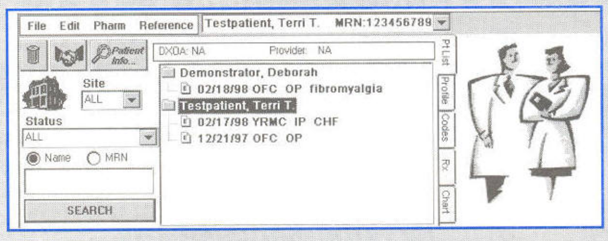
pocketCHART by PHYSIX (www.physix.com) lets a physician with an H/PC produce comprehensive and legible patient notes with relatively little effort. The Handheld PC has a small keyboard and typing in a lot of text is no fun. Fortunately, pocketCHART uses template-generated notes to speed data entry. They are implemented as user-defined pop-ups, which allow the physician simply to click on the screen to pick items (which are then added to the growing note).

Once entered, virtually all information is available to be "adopted" in other notes at other times. Physicians end up repeating themselves quite a bit in patient notes. The ability to quickly find and reproduce previously enter information is a big time saver. Further, certain information is automatically adopted into summaries displayed at various places in the program.

pocketCHART comes with several types of pre-programmed

Tim Urell is a board-certified family physician and Manager of Clinical Information Systems at Chino Valley Medical Center near Prescott, Arizona. He is a ardent advocate of using computers to improve medical care, and has worked on several such applications. Also a certified peace officer assigned to SWAT, he is working on a novel combining his experience in medicine and tactical operations.

blank forms you can call up and fill out for individual cases. These include History & Physical, Clinic Follow Up, SOAP, Quick SOAP, Addendum, Discharge Summary, and Referral letter. These represent most of the documents a physician needs to create. In version 1.5 of pocketCHART, the structure of these notes is not user-modifiable. However, future releases will allow the physician to write his or her own note structure.



Testpatient, Terri T. MRN:123456789

DXDA: NA Provider: NA

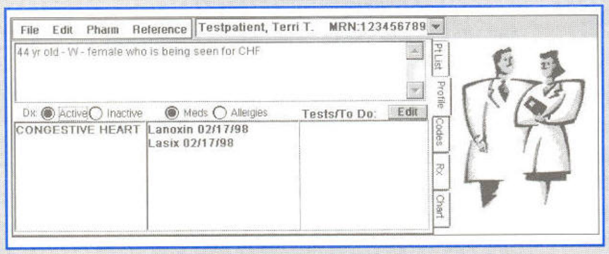
Site: ALL

Status: ALL

● Name ○ MRN

Demonstrator, Deborah
02/18/98 OFC OP fibromyalgia
Testpatient, Terri T.
02/17/98 YRMC IP CHF
12/21/97 OFC OP

Screen 5: pocketCHART's Main screen lets the physician start a new patient chart or go to the chart of an existing patient. The physician accesses patient information from the tabs on the right side of the large display box. Note that below the patients name in the display box is the date and a description (in code) of his/her most recent medical problems.



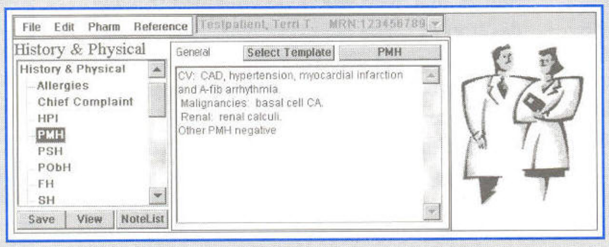
Testpatient, Terri T. MRN:123456789

44 yr old - W - female who is being seen for CHF

Dx: ● Active ○ Inactive ● Meds ○ Allergies Tests/To Do:

CONGESTIVE HEART
Lanoxin 02/17/98
Lasix 02/17/98

Screen 6: pocketCHART's "Profile" tab provides a summary of the patient's medical record. Tap on any item in the three lower summary lists and a complete description appears in the top text box.



Testpatient, Terri T. MRN:123456789

History & Physical
- History & Physical
  - Allergies
  - Chief Complaint
  - HPI
  - PMH
  - PSH
  - PObH
  - FH
  - SH

CV: CAD, hypertension, myocardial infarction and A-fib arrhythmia.
Malignancies: basal cell CA.
Renal: renal calculi.
Other PMH negative

Screen 7: The "Chart" tab is the very heart of pocketCHART. From this section this is where point and tap templates allow physicians to write complex notes without typing.

A Quick look at pocketCHART

pocketCHART's main screen lets you access patient information and create new records (see Screen 5). The large open box in the middle of the screen displays a list of the patients.You can display all, or part of your patient list.

The rest of pocketCHART's features are organized in "tabs." The "Profile" tab (see Screen 6) provides a summary of the patient's medical record. The information is automatically gathered from the notes and prescriptions entered elsewhere. pocketCHART presents the most important data on a single screen.

The government requires physicians to code the diagnoses they make and the procedures. The pocketCHART Codes Tab lets the physician access a reference list of ICD-9 and CPT codes, organized by category to make it easier to find the correct code. Picking codes is the slowest part of using pocketCHART. This is not really a criticism of pocketCHART, but of the code systems themselves.

pocketCHART's "Rx" Tab lets the physician create and print out a prescription. The Prescription Editor helps the physician create the prescription. It is linked to a drug lookup form called the Pharmaceutical Browser, which lets you look up medications along with brief prescribing information. pocketCHART lets you select a template for the way the prescription will look when printed out. After completing the prescription, you tap a "Print" button, which saves the prescription to a .TXT, .PWD, or .RTF file for later downloading and printing.

pocketCHART's Patient Chart Tab (see Screen 7) is the heart of the program. This screen lets you write a new note or view an old one. Every time a physician meets with a patient, the physician creates a "note" that describes the interaction. Because the structure of the note can be complex, pocketCHART splits the screen to make navigation within a note more intuitive. The left pane provides a list of the different sections of the note. Tap on an item in that list and the right pane shows the actual text being created for that part of the note.

Taping on the "Select Template" button pops a template for that section of the note. These templates are almost completely user-defined and can be up to three levels deep. For example, if a patient complained of pain in the left elbow the physician would first tap "pain," then tap "elbow," and finally tap "left." From these three taps, pocketCHART would enter a sentence which read: "The patient also complained of pain in the left elbow".

While many templates come with the program, PHYSIX provides a desktop utility called the Template Editor which allows a user to create his own templates. Writing templates is a meticulous and complex process which takes a great deal of time to do well.

Room to improve

pocketCHART provides physicians with a very useable EMR system. However, pocketCHART stores all of its data in the H/PC's internal memory. This problem is alleviated somewhat in the newer H/PCs with greater internal memory, but pocketCHART really needs to be able to store and access patient data in memory cards. PHYSIX also needs to engineer an easy way to move selected records to and from a desktop PC. *[According to PHYSIX, Inc., a forthcoming product called CE Desktop Link will allow pocketCHART to store patient demographic and billing information on a desktop PC. Uploaded information will be deleted from the H/PC's limited memory, and can be downloaded again when needed. Clinical notes, however, cannot be transferred and still must be printed out and stored in a physical chart.]*

I encountered a couple other minor problems. On several occasions sections of notes I had entered disappeared completely or showed up in other parts of the note. Also, it seemed that my H/PC locked up more often when in pocketCHART than when not.

Even with these problems, I consider pocketCHART on the handheld PC to be the most useable EMR system I have yet encountered. I have purchased several of these type of programs and written two myself, and I can tell you that it is not easy to cram all that data into a limited environment. That the team at PHYSIX could accomplish this is a testament to their prowess.

Medical pocketCHART — A full-featured electronic medical record keeper for Windows CE. Price: $995; Annual support and upgrade $149. Contact: PHYSIX, Inc. Phone: 800-749-2585/713-797-1199; Fax: 713-794-0855; Email: pocket chart@physix. com Web: www.physix.com

Mobile Channels: Take the Web With You Wherever You Go

By John Kennedy

Editor's Note: This article was written about the Mobile Channels application found on the Palm-size PC. Microsoft has recently released an H/PC version of Mobile Channels, available for free on Microsoft's Windows CE Website (see sidebar, page 27).

While a Palm-size PC version of Pocket Internet Explorer would be nice, most users realise that the small monochrome screen of the Palm-size PC isn't ideally suited for browsing the Web and viewing Web pages. The Palm-size PC is an easy-to-use information device, not a miniature desktop computer.

But there is a lot of very useful and entertaining information on the Web. Most of it in HTML format, integrating text, graphics, and even sound and movies. Any Web browser will let you save a Web page in HTML format. Later, when you are off line, you can view this document with your browser, just like you might view a text document using a word processor. In a nutshell, this is how Mobile Channels work.

What is a Mobile Channel?

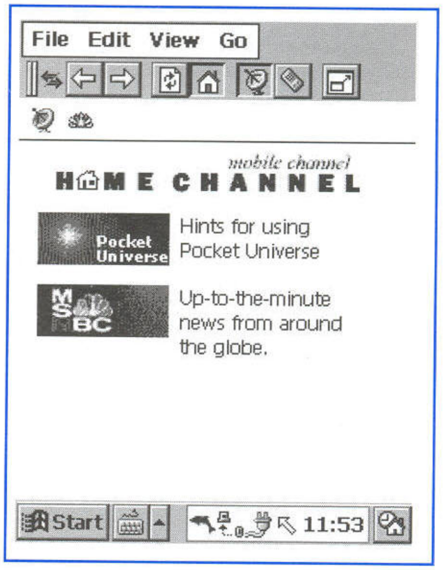
The Mobile Channels application on the Palm-size PC lets you display Web content you have downloaded to your Palm-size PC from your desktop PC. Most Web pages are designed to be viewed on a full-sized desktop PC screen. However, some Web sites have a specially designed "Mobile Channel" site. This involves designing the portion of the site to be downloaded with the display of the Palm-size PC in mind. It also involves a number of other things that I'll talk about later on in the article. The "Mobile Channels" application on the Palm-size PC displays information from one or more of these "Mobile Channel" sites.

The Mobile Channels concept is a spin-off from the Active Channel technology built into the desktop-based Internet Explorer 4.0. While Active Channels never seemed to take off, the Windows CE incarnation could breath new life into the entire project. Palm-size PCs are not the fastest or easiest systems to use for extensive on-line browsing, but if you've already identified the Web sites you're interested in, you can download the Web content to your PC Companion, and have a very quick and portable way to access the Web content.

Using Mobile Channels

Microsoft implemented Mobile Channels as part of Internet Explorer 4.0 (not any other Web browser). All you have to do is go to a Mobile Channel Web site, click on a Mobile Channel icon appearing on a web page, and the Mobile Channel portion of that Web site is downloaded to your desktop PC. The next time you synchronize your Palm-size PC with your desktop PC, the Web content is copied across – ready for you to read from your Palm-size PC. You can use Internet Explorer 4.0 to make this an automatic process, specifying which Web content is to be downloaded to your desktop every day.

The first thing you need to do in configure Windows CE Services to download Mobile Channel data. Make sure the Mobile Channels box is checked in the ActiveSync Options dialog on your desktop PC. This will ensure that any channels you select while browsing will be downloaded to your Palm-size PC. That's actually the hardest part: the rest is easy. Once you have synchronised your Palm-size PC, launch its Mobile Channels application from the Start menu. Any new Channel will appear on the application's main screen. To read one you simply tap on the Channel's icon (see Screen 1). The Mobile Channels application on the Palm-size PC enables you to delete unwanted files, or restrict the size of any incoming data. The Mobile Channels Options dialog makes this clear (see Screen 2).

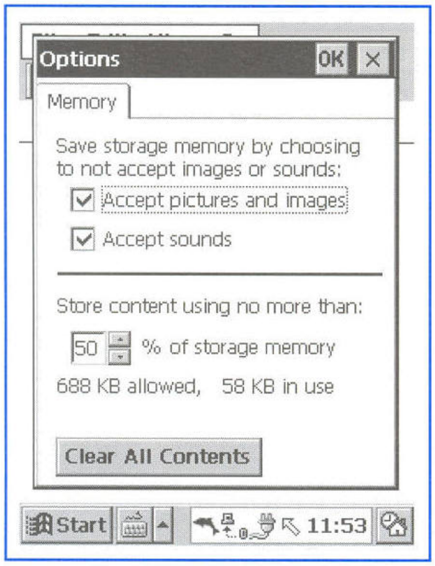

File
Edit
View
Go
mobile channel
HOME CHANNEL
Pocket Universe
Hints for using Pocket Universe
MSNBC
Up-to-the-minute news from around the globe.
Start
11:53

Screen 1: To read the Mobile Channel information you've downloaded to your Palm-size PC, open the Mobile Channel application and tap on the icon of the desired Mobile Channel (Pocket Universe or MSNBC in the above example) to view the information.

How a Mobile Channel works

A Mobile Channel Web site has a "Channel Definition Format" (CDF) file that tells a browser accessing it about the scripts, images and HTML files used in the Web site. The CDF file contains important details about which HTML files are to be downloaded, the frequency of updates, the icons used in the Mobile Channels home page and so on. When the user clicks on the Web site's Mobile Channel icon this CDF file, along with HTML, graphics, and other files, is downloaded by the desktop-based Internet Explorer browser. When the user synchronizes his or her Palm-size PC, the CDF file and data is passed on to the Palm-size PC. If you know anything about creat-

John Kennedy is a technical journalist based in Northern Ireland (although he's open to offers). When he's not writing, he's programming Windows CE applications for Sticky Software. E-mail: johntkennedy@sticky.net.



Save storage memory by choosing to not accept images or sounds:

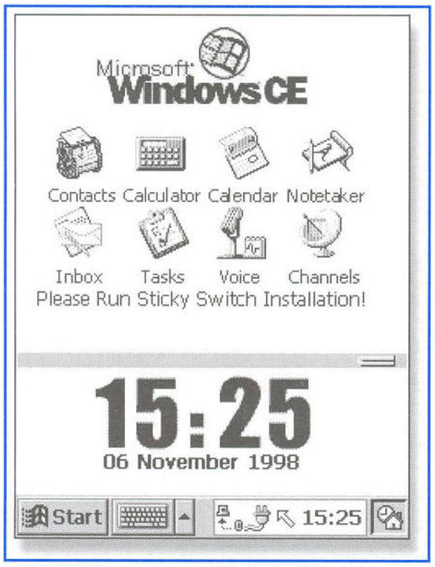
☑ Accept pictures and images

☑ Accept sounds

Store content using no more than: 50 % of storage memory

688 KB allowed, 58 KB in use

Screen 2: You can use the Mobile Channels Options screen on your Palm-size PC to restrict the size and type of in-coming data, and to clear storage memory of Mobile Channels content.



Screen 3: Using the Palm-size PC's Mobile Channels scripting language and Active Desktop, it's possible to re-configure the entire desktop.

ing Web pages and Web sites, creating a Mobile Channel site (or modifying an existing one) is not at all difficult. (Please see sidebar at right for more on this.)

The future of Mobile Channels

I strongly suspect that current uses of Mobile Channels are only scratching the surface of what's possible with the technology. Using a standard HTML editor is only one way of creating a Mobile Channel. The Palm-size PC has a complete and powerful

Creating a Mobile Channel

If you're familiar with creating Web pages and Web sites, creating your own Mobile Channel is rather straightforward. The key is creating the Channel Definition Format (CDF) file that tells a browser about the scripts, images and HTML files used in the Web site. CDF is itself based on the XML language and has much in common with standard HTML. The content of a CDF file will look familiar to someone used to working with HTML scripts. Once you've examined a few CDF files to get an idea of their contents and structure, creating your own should be easy.

Creating the pages used to define the content of the Mobile Channel can be done using standard Web authoring tools. All the important HTML tags are supported, although you won't be able to use fancy fonts and animated GIF files. And you should design your screens (and test them) to make sure they display well on the Palm-size PC's 320 by 240, four grey-scale screen.

It's also vital to keep your file sizes down. This minimizes downloading and transfer times. It's also important because the Palm-size PC stores Mobile Channel data in main memory, rather than on a PC storage card. While there are ways around this restriction, there are disadvantages associated it. It's something for advanced users only.

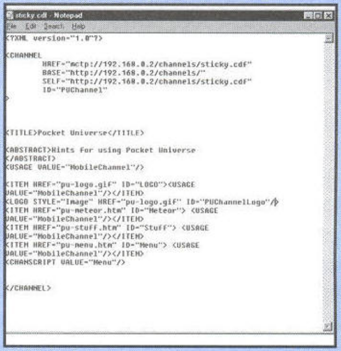
Creating Sticky Software's Mobile Channel

My company maintains a Web site for the Windows CE software we have developed, including a program called Pocket Universe, which displays a sky map of stars and planets on the Palm-size PC (contact Sticky Software at http://www.sticky.net). I wanted to add a Mobile Channel to our site to provide Palm-size PC users with some more Pocket Universe information in an easy-to-access format. Although it would be possible to provide the data (dates of meteor showers, bright star clusters and so on) in help-file format, a Mobile Channel is easier for users to download and install. It's also easier for me to update and has the benefit that visitors to the Web site who don't currently own the application can still download and browse the channel.

Here are the steps I followed to create the Mobile Channel.

Step 1: Write the Mobile Channel pages of information

This is probably the hardest part of the process. I used FrontPage Express, which comes with Windows 98. Keep in mind that the design must take into account the Palm-size PC's small screen and limited graphics capabilities. There will be no large graphics in these pages, just useful text.



```
<?XML version="1.0"?>

<CHANNEL
        HREF="mctp://192.168.0.2/channels/sticky.cdf"
        BASE="http://192.168.0.2/channels/"
        SELF="http://192.168.0.2/channels/sticky.cdf"
        ID="PUChannel"
>



<TITLE>Pocket Universe</TITLE>

<ABSTRACT>Hints for using Pocket Universe
</ABSTRACT>
<USAGE VALUE="MobileChannel"/>

<ITEM HREF="pu-logo.gif" ID="LOGO"><USAGE
VALUE="MobileChannel"/></ITEM>
<LOGO STYLE="Image" HREF="pu-logo.gif" ID="PUChannelLogo"/>
<ITEM HREF="pu-meteor.htm" ID="Meteor"> <USAGE
VALUE="MobileChannel"/></ITEM>
<ITEM HREF="pu-stuff.htm" ID="Stuff"> <USAGE
VALUE="MobileChannel"/></ITEM>
<ITEM HREF="pu-menu.htm" ID="Menu"> <USAGE
VALUE="MobileChannel"/></ITEM>
<CHANSCRIPT VALUE="Menu"/>


</CHANNEL>
```

Screen 4: Use a text editor to create the CDF file for the Mobile Channel pages you've created. Notice that the code in the CDF file looks very much like the code in an HTML file.

Step 2: Create the Mobile Channel CDF file

After creating the HTML pages and a small menu page, the next stage was to write the CDF "wrapper" which tells the browser accessing the site about the Mobile Channel part of the site (see Screen 4). This took a bit of figuring out, mostly from looking at other Mobile Channels and referring to the information on the Microsoft Website. The CDF file is a simple text file and Notepad was the easiest way to create the file.

Step 3: Add the Mobile Channel files to the Web site

Once tested, all the files used in the channel can then be uploaded to the Website (see Screen 5). A standard graphic image is used to provide a link to the CDF file, allowing visitors to click and download the Mobile Channel data to their PCs, ready for transfer to the Palm-size PC at the next synchronization.

(Continued next page)

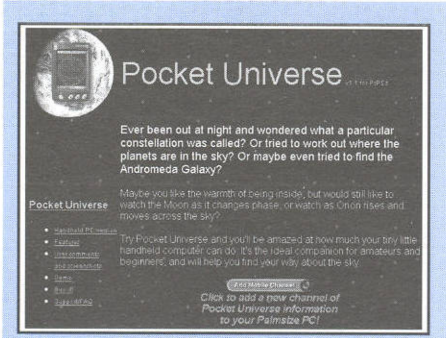
Mobile Channel Links

There are dozens of Mobile Channel sites on the Web, ready for you to access and download to your Palm-size PC. They cover topics including city guides, sports, news, weather, jokes, Star Trek and programming. In fact, entire books are distributed in Mobile Channel format. A page of links to Mobile Channel sites is available on Microsoft's Windows CE Web site, and is located at www.microsoft.com/windowsce/ppc/channels/featured.asp. A more comprehensive list of Mobile Channel links can be found on Chris De Herrera's Windows CE Website, located at www.cewindows.net/.

scripting engine built into it: instead of referencing HTML files, the CDF can point to script files. These files can contain a sub-set of Visual Basic commands to create some extremely sophisticated displays on the Palm-size PC. For example, it's possible to use scripts to create custom on-the-fly displays as the Mobile Channel script accesses and then processes downloaded information.

Furthermore, the display on a Palm-size PC is similar in many ways to Windows 98's Active Desktop. This makes it possible to build interactive elements into the Palm-size PC's desktop (like the changing date and time in the taskbar, or the up-coming appointments displayed in the opening screen). You can see an example of this in Screen 3, in which my Palm-size PC displays a new "desktop" with a larger time display and easy-to-use buttons for launching applications.

Finally, Microsoft has recently released a version of Mobile Channels for existing H/PCs, and rumor has it that it will be built into the new H/PC Pro (see sidebar above). This should encourage the creation of more Mobile Channel Web sites and help to kick-start the development of some very powerful and useful new applications.


Pocket Universe

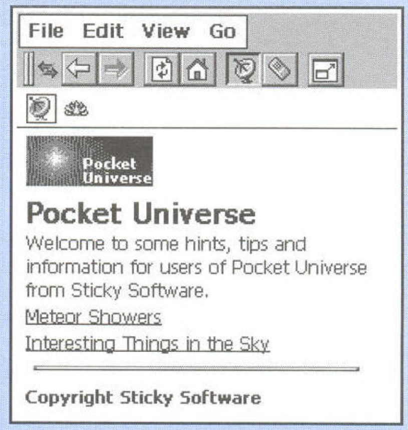
Ever been out at night and wondered what a particular constellation was called? Or tried to work out where the planets are in the sky? Or maybe even tried to find the Andromeda Galaxy?

Maybe you like the warmth of being inside, but would still like to watch the Moon as it changes phase, or watch as Orion rises and moves across the sky?

Try Pocket Universe and you'll be amazed at how much your tiny little handheld computer can do. It's the ideal companion for amateurs and beginners, and will help you find your way about the sky.

Click to add a new channel of Pocket Universe information to your Palmsize PC!

Screen 5: Once you've created and tested the necessary files, upload them to your Web site. A standard button labelled "Add Mobile Channel" links to the CDF file. Visitors click on the button and download the Mobile Channel data to their PCs.



Pocket Universe

Welcome to some hints, tips and information for users of Pocket Universe from Sticky Software.

Meteor Showers

Interesting Things in the Sky

Copyright Sticky Software

Screen 6: Sticky Software's Pocket Universe Mobile Channel provides supplementary information about the product to Palm-size PC users.

Step 4: Download the Mobile Channel to your Palm-size PC

Synchronize your Palm-size PC with your desktop PC, automatically downloading the Mobile Channel data to the Palm-size PC (see Screen 6). The new Mobile Channel provides an easy way of supplementing the product's on-line help with useful data which the user can reference at any time. Best of all, anyone can download the channel without first buying the application.

If you plan on creating your own Mobile Channel, check out Microsoft's Mobile Channels Development Kit Preview Release pages at www.microsoft.com/workshop/delivery/mobile/mcdk_in.asp. You might also find the Microsoft CDF file utility useful (www.micro soft.com/-gallery/ tools/liburnia/liburnia.asp).

Mobile Channel viewer available for H/PCs

Microsoft has recently released a Handheld PC version of the Mobile Channel viewer. H/PC users can now download and view Mobile Channel information (previously only viewable on Windows CE running on the Palm-size PC).

You can download the H/PC Mobile Channel viewer for free at Microsoft's Windows CE Web site. The specific Web address is www.microsoft.com/windowsce/downloads/pccompanions/mcviewer.asp

Mobile Channel Wizard

The Mobile Channel Wizard lets you easily create a Mobile Channel from any Web site. Simply run the wizard, select or type your URL, choose some options, and you've created your own Mobile Channel from your favorite Website. Unlike standard mobile channels, Mobile Channel Wizard channels are not subscriptions and will not be updated until the Mobile Channel Wizard is re-run on those Web addresses.

You can download the Mobile Channel Wizard for free at Microsoft's Windows CE Website. The specific Web address is www.microsoft.com/windowsce/downloads/pccompanions/mcwizard.asp

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➪ Connects to a desktop parallel port

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189.95 Model CL683 for Type I, II and III cards
199.95 Model CL682 has 2 slots for Type II

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14035 Appling Lane, Charlotte NC 28278
Phone or Fax (704) 588-1780
Find latest drivers at www.cardlink.com

Speed Up Connectivity: Connecting an H/PC to a LAN

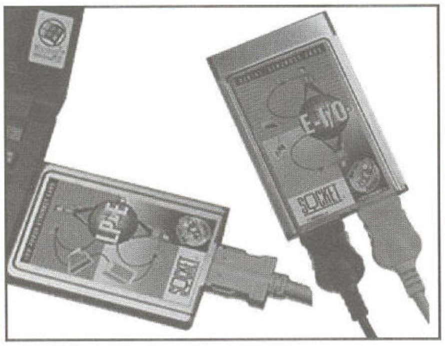
By Chris De Herrera, PDCChrisD@Aol.com

When you're ready for the ultimate in communications speed, try connecting your handheld PC to your office LAN or the Internet using an Ethernet card. Data transfer rates of up to 10 mb/s are possible. Compare that to 19,200 Kbps via a serial cable connection and you begin to see why this connectivity solution is attractive. Faster Ethernet cards, with 100 mb/s transfer rates are available, but software drivers for Windows CE haven't been written for them yet.

Once connected via Ethernet card, you can do anything you can do with the serial connection, only much faster. Use ActiveSync to synchronize with your desktop; backup your data (4 MB system takes less than 5 minutes!); copy software and documents back and forth; and install programs on your H/PC. You can also access a variety of Internet services, including Web browsing and e-mail, FTP, Telnet, IRC (Internet Relay Chat). Accessing Newsgroups is possible with additional software from Ruksun Software (www.ruksun.com/) and bSQUARE (www.bsquare.com/). Socket Communications has provided Ping and IP Address, a utility to assist users with configuring their Socket LP-E PC Ethernet Card (see "Troubleshooting" below). [Note: If you are using Windows NT please review the Ethernet FAQ on my Website at www.cewindows.net]

Not for Beginners!

This description assumes a moderate level of experience with networks and their configuration. If you're a novice in this area, seek the assistance of your network administrator. Even users experienced with networks may need such assistance. Also, please refer to the troubleshooting section if you are having problems.



Below, I describe briefly how to connect your H/PC to a Windows 95 PC on a LAN using an Ethernet card. You will need:

1. A PCMCIA Ethernet card for your H/PC. Both the LP Ethernet card (35 mA) or the Ethernet I/O card from Socket Communications (www.socketcom.com/) are certified by Microsoft to be compatible with the H/PC. I have used other Ethernet cards, and still more are reported to work. For more on this, visit my Website at: www.cewindows.net.
2. An Ethernet card for your desktop, or laptop PC. This should already be configured with the Client for Microsoft Networks and TCP/IP. If this is not already done, please install it now. This is done from the Control Panel > Network icon (for further assistance, click Start > Help > How To "Use a Network" and follow instructions).
3. An Ethernet hub. If you are working in an office, you may want two outlets to do this — one for your desktop PC and the other for your Handheld PC.

Before we get started, you must have installed Windows CE Services on your PC and connect your H/PC to your PC via the connectivity cable that came with the H/PC. If you attempt an Ethernet connection without doing this, the "Connect To" name on the Handheld PC will not list your PC's name and the connection will not work.

Note: Microsoft assumed that you would not be synchronizing your H/PC with more than two PCs (e.g., your office and home PC). Therefore, they designed your H/PC so that it can only store configurations for 2 ActiveSync connections. If you attempt to connect to a new host PC, the Handheld PC will ask you to delete one of the existing ActiveSync connections. Both of these connections can be an Ethernet connection.

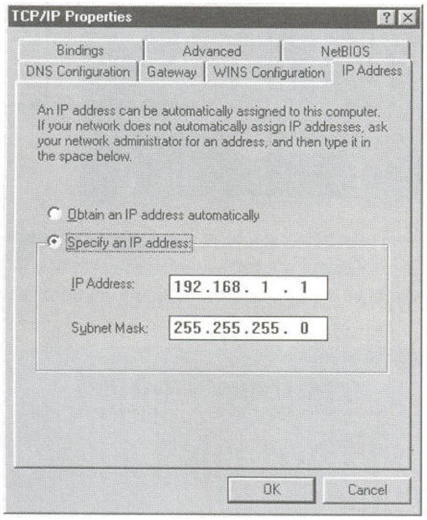
If you need to configure two different Ethernet connections and don't want to go through the hassle of deleting and reconfiguring connections, check out a program called HPC NetProfile 1.0 (Phatware, www.phatware.com). It lets you change these connections easily by selecting a profile from a list. This is a great benefit to Network Administrators that have multiple offices or configurations. The shareware version of this utility is available on my Website (www.cewindows.net) or on the *Handheld PC Magazine 1999 CE InfoBase*.

[Note to developers: Remote debugging is not supported over Ethernet. All other developer services, including the code transfer, database viewer, memory viewer, registry viewer, screen capture and spy work over Ethernet are supported. Also, Windows CE does not provide some of the common tools for configuring and diagnosing network problems such as arp, finger, hosts, traceroute, etc.]

Installation and Configuration

1. Connect your Handheld PC to your

Chris De Herrera is a Forum Consultant for America Online's Windows CE Forum. He is also a Microsoft Most Valuable Professional for Windows CE. The AOL Windows CE forum is accessible via the keyword "Windows CE."


TCP/IP Properties
Bindings
Advanced
NetBIOS
DNS Configuration
Gateway
WINS Configuration
IP Address
OK
Cancel

An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.

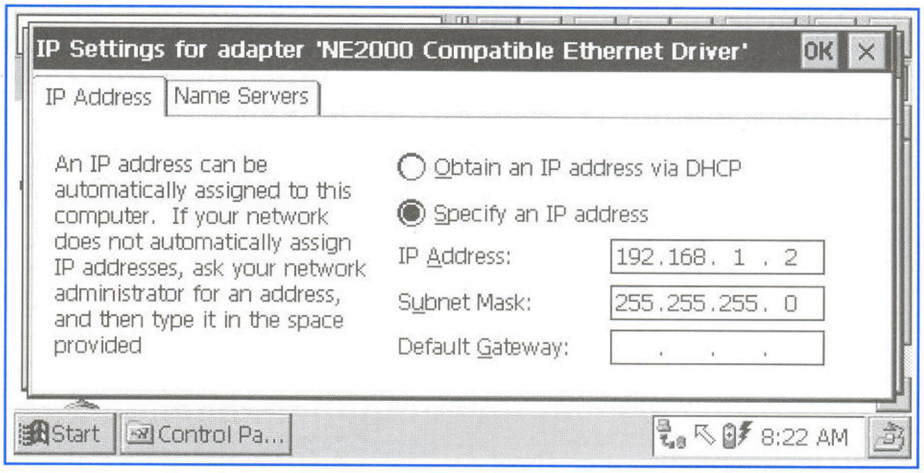
○ Obtain an IP address automatically

● Specify an IP address:

IP Address: 192.168. 1 . 1

Subnet Mask: 255.255.255. 0

Screen 1: From your desktop PCs Control Panel, select the Network icon, click on the TCP/IP tab for your Ethernet card and verify the IP Address and Subnet Mask.


IP Settings for adapter 'NE2000 Compatible Ethernet Driver'
OK
IP Address
Name Servers
Start
Control Pa...
8:22 AM

An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space provided

○ Obtain an IP address via DHCP

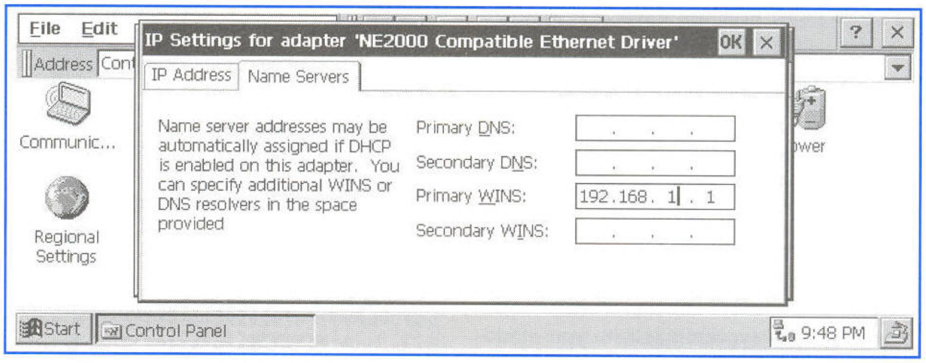
● Specify an IP address

IP Address: 192.168. 1 . 2

Subnet Mask: 255.255.255. 0

Default Gateway: . . .

Screen 2: From your H/PC's Control Panel, select the Network icon. Tap on Properties, select the "Specify an IP Address" button and enter the IP Address and Subnet Mask. Although this screen does not show it, enter the Default Gateway as 192.168.2.1.


File
Edit
Address
Con
Communic...
Regional Settings
ower
IP Settings for adapter 'NE2000 Compatible Ethernet Driver'
OK
IP Address
Name Servers
Start
Control Panel
9:48 PM

Name server addresses may be automatically assigned if DHCP is enabled on this adapter. You can specify additional WINS or DNS resolvers in the space provided

Primary DNS: . . .

Secondary DNS: . . .

Primary WINS: 192.168. 1 . 1

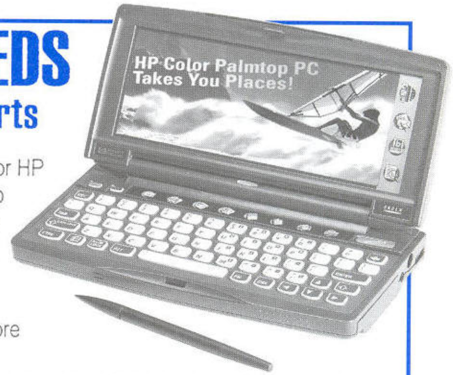
Secondary WINS: . . .

Screen 3: After step 3, select tab labeled Name Servers and enter address for the Primary WINS Server.

desktop PC via ActiveSync. I recommend that you perform a backup before proceeding. Then insert the Socket LP-E Ethernet driver diskette in your PC and use Start - Run a:\setup to install the Ethernet drivers on your Handheld PC. You must then press the reset button on your Handheld PC.

2. Confirm the configuration of your desktop IP address and the Client for Microsoft Networks. This is done on the desktop PC by clicking on Start > Settings > Control Panel > Network (see Screen 1). You should see a listing for the Client for Microsoft Networks as well as TCP/IP. Double click on the TCP/IP for your Ethernet card and verify that the IP Address is set to 192.168.1.1 and the Subnet Mask to 255.255.255.0. (Screen 1).

3. Now we need to set the IP address of the Handheld PC. This is done from the H/PC by tapping on Start > Settings >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Troubleshooting

If you have problems, follow these steps:

1. Confirm that the Ethernet drivers are installed and the hardware is connected correctly. Try to "ping" the Handheld PC 's IP address from the DOS/Command prompt. The command is PING 192.168.1.2. It should answer back with 4 responses indicating how long it took to get there. Mine averages about 10 milliseconds. If this does not work, you need to check the connection to the hub and the Ethernet ports of both machines. Also confirm that you have configured the IP address of the desktop PC as well as the Handheld PC.

2. If you are unable to connect and all the settings are correct, don't forget to remove and reinsert the Ethernet card to make the Handheld PC's TCP/IP settings take effect.

NOTE: The Ping and IP Address utility provided courtesy of Socket Communications is available on my website (members.aol.com/pdcchrisd) or on the Handheld PC Magazine PowerCD. I have confirmed that it is compatible with the Socket LP-E PC Ethernet Card. Please read the README.TXT file for details on how to use these utilities.

Control Panel > Network. You should see the NE200 Compatible Ethernet Driver listed. Click on Properties. Select the "Specify an IP Address" button and enter the indicated addresses: IP Address - 192.168.1.2, Subnet 255.255.255.0, Default Gateway 192.168.2.1 (Screen 2).

4. Then click on the tab labeled Name Servers. You need to enter 192.168.1.1 as the Primary WINS Server. All the rest of the fields are left blank (Screen 3). Now click OK to accept the changes. A screen will remind you that you need to remove the Ethernet card if you have already inserted it in order for the changes to take effect.

5. Insert the Ethernet card into your Handheld PC. Then select Start > Programs > Communication > ActiveSync. In the dialog box you should see your Method of Connection as "Network Connection" and the Connect To as your desktop PC's name. If you do not, then you need to review the steps listed above for errors. On your desktop PC click on Connect to connect to your Handheld PC via Ethernet and then you can choose to synchronize from the Handheld PC by clicking on the Sync Now button.

Once the connection is made the Mobile Devices icon comes up on your desktop PC and you can access the H/PC's files as normal. If the connection fails, ActiveSync closes without a dialog box, indicating that the connection was not completed.

I hope this helps explain a little more about what Windows CE is capable of with Ethernet. I talk about the H/PC and Ethernet, but soon you will be able to use Ethernet with the Palm-size PC. Socket Communications is releasing their Low Power Ethernet CompactFlash Card, which provides the same capabilities to use Ethernet for the Palm-size PC as the Handheld PC has. You can reach Socket Communications at www.socketcom.com.

My Website has more information on setting up communications with Windows CE, including FAQs text files on Ethernet, Remote ActiveSync, IrDA, ActiveSync, etc. Also, I have detailed comparisons, pictures and screen shots of Windows CE 2.0 Handheld PCs, Palm-size PCs and embedded systems. There are links to the latest news on Windows CE as well as Windows CE related newsgroups and Websites to keep you up to date.

Visit me at: members.aol.com/pdcchrisd. If you have any questions or comments on this article, or have additional information or tips about the subject, feel free to email me at: PDCChrisD@aol.com <mailto:pdcchrisd@aol.com>. ■

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Windows CE software for Handheld and Palm-size PCs.

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- *Pocket German*
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- *FunPack 2*
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- *JimmyARK*
- *WarriorCE*
- *Solitaire Pack*
- *Palm Solitaire Pack*
- *Unicorn*
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- *ModPlayerCE*
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View Windows CE textual databases in a list or card format.

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Using Freeware On a Palm-size PC

Many freeware programs available for H/PCs and Palm-size PCs do not include automatic installation routines. This means that you have to manually copy the program file over to the PC Companion and then use a file-manager type of program to start the application. H/PCs come with Pocket Windows Explorer built in, but there is no such program built into any of the Palm-size PCs. The Casio E-10 and E-11 come with File Find on CD ROM. You can install File Find on the E-10/11, and use it to find and launch programs (or open documents). The following file explorers are available for other Palm-size PCs: CSI File Explorer (part of the CSI PowerPack available from Casio Soft, Inc, www.casiosoft.com for more information); Palm Explorer (from Grundle Software, www.grundlesoftware.com); and Tascal Filer Ex (part of Tascal Tools Vol.1, available at CE Monster, www.cemonster.com).

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Cases

Nutshell H/PC and Palm-size PC Carrying Cases

Slipcases are made of sturdy sheet polypropylene front and back, bonded to Genuine Leather. Belt clip makes Palm-size PC easy to remove. Cases feature triple-layer construction that repels moisture and heat.

Price: Ps/PC case: $39.95
Price: H/PC case: $79.95
Contact: Nutshell Corp.
Phone: +64 9 818 5842 (New Zealand)
Fax: +64 9 833 5817
Web: http://tuff-as-nuts.com/

Communications

Pretec CompactFlash Fax/Modems

An ITU V.90 and K56Flex compatible 56Kbps Fax/Modem in the CompactFlash form factor. An extender attaches to the card, allowing you to connect to a phone line. Use with any Windows CE-based Palm-size PC or H/PC with CompactFlash slot to transfer files, send/receive e-mail and faxes, and interact with the Web. (Note: Pretec Web site says the product is not yet compatible with the Casio E-10, and presumably the E-11, as of 10/12/98.) An inexpensive CompactFlash adapter lets the CompactFlash Modem be used with most notebook computers and devices with standard PC card slots. End users need just one modem card for all their mobile computers.

Price: $199
Contact: Pretec Electronics Corp.
Phone: 510-440-0535
Fax: 510-440-0534
Email: cardinfo@pretec.com
Web: www.pretec.com

Proxim RangeLAN2

A wireless local area network (LAN) is a flexible data communications system implemented as an extension to, or as an alternative for, a wired LAN. Using radio frequency (RF) technology, wireless LANs transmit and receive data over the air, minimizing the need for wired connections.

Proxim offers complete wireless LAN solutions for small and large organizations. These include RangeLAN2 "Access Points" (transmitter/receivers that connect to the LAN) and RangeLAN2 7400 PC Cards (transmitter/receivers for mobile devices like the Handheld PC).

The new H/PC Pro class of Windows CE devices comes with the necessary Range LAN2 drivers and utilities built in.

Price: RangeLAN2 7400 PC Cards – $595
Driver software – $free
RangeLAN2 Access Points – contact Proxim
Contact: Proxim
Phone: 800-229-1630; Fax: 650-960-1984
Web: www.proxim.com

Navigation

TeleType GPS Version 3.5

TeleType GPS displays city points throughout the world, U.S. highways, and international shorelines. It plots and traces position. Fleet management and tracking options are also available. The GPS software and mapping program is packaged with a GPS receiver/antenna package. Version 3.5 features vehicle tracking, Address Finder from Windows CE address book, and support for our new Geocoder Utility. The new version also supports the new Microsoft Window CE Professional operating system.

Price: $399.95 (software and hardware)
Use with H/PC and Ps/PC
Sales Contact: Mobile Planet
Phone: 800-MPLANET

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E-mail: sales@mplanet.com
Web: www.mobileplanet.com
Developer Contact: TeleType Co
Phone: 888-TELETYPE, 617-734-9700
Web: www.teletype.com/gps/gpspr.html

Software

CAD

Sketch CE

SketchCE 2.0 is a "mini-cad" with support for zoom, pan, coordinates input, lines input, calculates areas/groundplanes by using the pen, and .DXF export.

Price: $21 Demo available from Sales contact's Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: InterFox
Web: www.interfox.de/html/sk2intro.htm

Calculator

CalCE

A calculator supporting arithmetic, base conversion, logarithm functions, statistics, and memory functions.

Price: $19.95 Demo available from either Website.
Use with H/PC
Sales Contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Queen image
Web: www.queenimage.com/

PalmSciCalc

A scientific calculator for Palm-size PCs.

Freeware. Download form Sales Contact's Website
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

RapidCalc

RapidCalc is accessed from the soft-input panel window on your Palm-size PC, allowing you to perform calculations while working with other applications. To activate RapidCalc, select RapidCalc from the input method selector located in the taskbar. You can easily paste the results from RapidCalc into any document by tapping the paste button. You also have the option of using Note Taker (any text editor) as a "paper-tape" of your calculations.

Price: $13.95 Demo available from Contact's Website.
Use with Ps/PC
Contact: Developer One
Phone: 414-423-7276; Fax: 414-423-7065
E-mail: sales@developerone.com
Web: www.developerone.com/

Calendar

CSI Voice Calendar

Simplifies the organization of voice recordings on a PC Companion. CSI Voice Calendar lets you see on a graphical calendar how many recordings you made on a particular day; you can tell by the length of the line the relative duration of each recording that day, and you can also play each sound file from within the application.

Freeware. Download at CASIO Soft Website
Use with H/PC or Ps/PC
Contact: CASIO Soft, Inc.
Phone: 408-441-2000; Fax: 408-441-4175
E-mail: info@casiosoft.com
Web: www.casiosoft.com

Communications

ProxiWeb for Palm-size PCs

A full-featured, graphical Web browser for the Palm-size PC.

Features include: Transformation of images for accelerated online browsing; HTML forms and server-side image map support; Cookies and basic authentication for accessing personalized Websites; Editable cache file for offline browsing; Editable bookmark files for one-click access to frequented sites; Basic support for navigating pages with frames.

Freeware. Download beta demo from Contact's Website.
Use with Ps/PC
Contact: ProxiNet
Web: www.proxinet.com/proxiweb/wince.html

AvantGo 2.0

A scalable client/server solution for extending enterprise and Web-based applications to Handheld PCs and other portables. AvantGo Server enables the centralized administration of information between a corporate enterprise, department or division, and mobile handheld devices. AvantGo Connect provides connectivity between handheld devices and the AvantGo Server via a desktop or kiosk. AvantGo Client offers direct access to information on the AvantGo Server, from any network to any handheld device.

Price: Please call
Use with H/PC
Contact: AvantGo, Inc.
Phone: 650-638-3399; Fax: 650-638-3398
Web: www.avantgo.com/

News Force for Palm-size PC

A Windows CE based news client supporting both, on and offline news reading from all your favorite USENET newsgroups. The current version features an optimized UI for the smaller Palm-size PC resolution and includes a threaded display of messages for easy access to information. If you download the messages from the Internet to your Palm-size PC, you can read, reply or forward them from wherever in the world you are. This version also includes a 'Quick preview' window that allows a user to quickly access the most important information in a message at a glance.

Price: Free pre-release (beta) version. Download from Contact's Website.
Use with Ps/PC (also available for H/PCs)

www.PalmPCWorld.com

Your one-stop shop for Windows® CE based products including hardware, software and accessories

- Casio, Philips, LG Electronics
- A growing library of Windows® CE software ready for immediate download
- The latest Windows® CE news

PalmPC World
16A Seymour Road
East Granby CT 06026
Phone/Fax: 1.800.490.PALM (7256)
Email: info@palmpcworld.com

Contact: Ruksun Software Technologies, Ltd.
Phone: +91 212 678286 or +91 212 678288; Fax: +91 212 678866
E-mail: info@ruksun.com
Web: www.ruksun.com/

PowerTerm CE

Terminal emulator for Windows CE 2.0 and above devices. PowerTerm CE lets you access corporate systems on the road and in the office, connecting via modem or directly to a local LAN. PowerTerm CE supports the following emulations: VT52, VT100, VT220, VT320, VT420, VT525, IBM 3270, IBM 5250, IBM AIXTERM, Data General D-412, SCO-ANSI, BBS-ANSI, AT386, TVI 925/950, WYSE 50/60. PowerTerm CE includes all CRT, 3270 and 5250 emulations. An FTP client is not included.

Price: $99 (individual user) Demo available.
Use with H/PC
Contact: Ericom Software
Phone: 877-4-ERICOM
Fax: 201-525 5499
Web: www.ericom.com

SimpleCheck

Checks multiple POP3 e-mail accounts and notifies the user when any new mail arrives in any of these accounts. It has simple account editor, progress window and result window. Result window shows a subject, a sender and size of the message. All information about accounts is stored in the registry.

Freeware:Download from either Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: MaxLand
Web:www.geocities.com/SiliconValley/Lab/7468/index.html

Windows CE 3164 Emulator

The 3164/CE Emulator runs on Windows/CE 2.0 and above. It supports both color and monochrome handheld PCs. Communication to the host system is supported via dial-up access from the internal modem of the Handheld PC, a PCMCIA modem card, or an external modem attached to the serial port. The 3164/CE Emulator supports the following host systems:

AS/400 with ASCII Work Station Controller

AS/400 and System/3x with Protocol Converter

RS/6000 Serial Ports and Asynch Adapters

4680/90 Serial Ports and RTIC Cards

Mainframes via Protocol Converters and ASCII Controllers

The 3164/CE Emulator provides an interactive display session with your host system. You can access the same host applications available to you through local terminals, local PCs and/or dial-up PCs directly from your handheld PC.

Price: $129
Use with H/PC
Contact: Productivity Systems, Inc.
Phone: 414-321-8688; Fax: 414-546-8499
Web: www.psi3164.com

Data

Tally It

Lets the user create an electronic "Tally Pad." Lets you record data on the fly, total it, and display the data as histograms or pie charts. Tally It can be used in a variety of data gathering contexts, from experimental data logging to market research and surveying to sales tracking. The program keeps data on different "Tally Pads" and displays item counts for each pad or item count totals over all pads. Graphs are displayed either of all the items in a single page, or of a single item across pads.

Price: $29.95 Demo available from contact's Web site.
Use with Ps/PC
Contact: Logeny Inc.
Phone: 503-622-4055; Fax: 503-622-4537
E-mail: hk@logeny.com
Web: www.logeny.com/

BlowfishCE Lite 1.0

Keep information in a simple database on your Handheld PC. Data is password protected so that if your Handheld PC is lost or stolen, your data will be safe.

Price: $19.95
Use with H/PC
Sales contact: Mobilesoft
Web: www.mobilesoft.com
Developer contact: Bereshit Software
Email: atwood@netvision.net.il

GraphCE

Graphing program that accepts columnar data in text or spreadsheet format from the Clipboard, and generates two dimensional line and scatter graphs.

Freeware: Download from either Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer: www.execpc.com/~fdeck/graphce/

JetForm Filler 3.0

Download data collection "forms" to your Windows CE Handheld or Palm-size PC, collect data on the go, and then transfer their data via e-mail, infrared, modem, or serial cable to a host computer for further processing. Data collection forms are created on a desktop PC using JetForm Design 5.1, and then downloaded to the Windows CE device using Windows CE Services. Some new enhancements to JetForm Filler CE include:

- Form and data transfer via e-mail, compatible with JetForm Central, support for JetForm string functions, and many more form filling features.
- Forms and data files can be stored on the internal and external storage options provided by the new H/PC units.
- JetForm Filler for Windows CE is fully supportive of multi-byte and Unicode character sets, thus enabling the software to be used in any of the languages that the Windows CE operating system supports.
- JetForm Design can create forms using the larger screen sizes of the H/PC Pro.
- New pointing devices, such as touchpads, which will be integrated into some of the new H/PC devices, are also fully supported by the JetForm Filler for Windows CE software.
- Allows the user to print directly from the handheld PC.

Price: JetForm Filler: $79
JetForm Design: $N.A.
Use with H/PC and Ps/PC
Contact: Joey Technologies
Phone: 813-822-JOEY (5639)
Fax: 813-823-0456
Email: sales@joeytech.com
Web: www.joeytech.com

Finance

Annuity

Calculates the fixed annuity corresponding to a given investment, at a given rate and over a given period of time.

Freeware: Download from Sales contact's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

Dmoney

Customizable financial tracker for your Ps/PC.

Freeware: Download from Sales contact's Website.
Use with Ps/PC
Sales Contact: Tucows CE Monster
Web: www.cemonster.com
Developer: www.dcollections.com/

Dollars and Cents

A personal finances manager for Windows CE 2.0 that supports multiple accounts, transfers, repeating transactions, running totals, and minimum and maximum balance displays. Other features include automatic tip entry for restaurants, online help, export to CSV, TXT, QIF, and TSV files, resizable and movable columns.

Freeware: (Beta demo) Download from Sales contact or Developer's Website.
Use with H/PC and Ps/PC

Sales contact: Tucows CE Monster
Web: www.cemonster.com
Web: www.laurenson.com/

HPC Bills and Reminders

Helps you track bill payments, due dates and other important things. After you enter in the date, frequency, description, and amount due for each bill, the program keeps a running total of what you owe and when payment is due.

Price: $19.95 Demo from Sales contact or Developer's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Boma Electronic Corporation
Phone: 650-949-0767
E-Mail: info@boma-electronic.com
Web: www.boma-electronic.com/wince/

Quicken ExpensAble

Upgrade of a portable expenses tracker that lets you capture, group, preview and store travel expenses on the go. Print basic summary reports using the desktop utilities that come with ExpensAble for Windows CE. You can transfer expense reports envelopes created on your H/PC to a desktop PC with Quicken ExpensAble 98 to add scanned receipts, process expenses, print reports, track budgets, e-mail or print reports and more. Now works with Ps/PC as well as H/PC.

Price: $49.95 Demo available at either Website.
Use with H/PC and Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: On the Go Software
Phone: 800-331-3416 or 520-901-3220
Web: www.onthegosoftware.com/

Games

Deep Dungeon

Cross between a role playing and action game.

Freeware: Download from Sales contact's Web site.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

EZSolitaire

Jump all the marbles leaving none left. You can play it on two different boards.

Freeware: Download from either Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Ezos s.a. BELGIUM
Phone: + 32 2 387 20 00; Fax: + 32 2 387 20 10
Email: registration@ezos.com
Web:www.ezos.com/

Palm3DTTT

3D tic-tac-toe game for the Palm-size PC.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmBlackJack

Blackjack card game for the Palm-Size PC.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmBlastMyMind

Guess the position and color of the computer's preselected pegs. You have ten tries before the computer beats you.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmCenterPeg

Jump all the pegs on your screen, leaving only one behind at the end.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmCheckers

Checkers (Draughts) for Palm-Size PC.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmChess

Features a strong chess engine with multiple levels; opening database with 4000+ positions; the ability to play as white or black; set up any position; save and open games in PGN format; hint, takeback, switch sides, and more.

Price: $29.95 Demo available from Sales contact or Developer's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Synctel Software
Phone: 619-452-1081
E-mail: support@synctel.com
Web: www.synctel.com/

PalmGolf v1.0

A realistic golf game than can be played by up to 4 players. You can also play practice rounds against the computer. Club choice, direction of the wind, lie of the ball, and strength of the shot, are all within your control. PalmGolf v1.0 keeps track of all your scores, including personal bests.

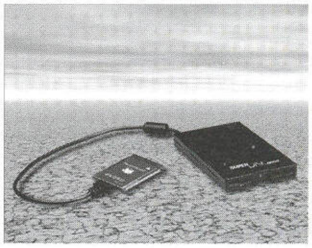
Price: $29.95 Purchase from Sales contact's Website.
Use with H/PC or Ps/PC
Sales contact: Mobilesoft
Web: www.mobilesoft.com
Developer Contact: ZIO Interactive Entertainment, Inc.
Phone: +82 2 512 7506; Fax: +82 2 512 7509
E-mail: palmgolf@ziosoft.com
Web: www.ziosoft.com/

PalmItchSketch

Turns your Palm-Size PC into a drawing tool similar to the popular Etch-A-Sketch.

Travel 120™ PCMCIA LS-120 SuperDisk™ Drive
Now Available for Windows® CE!

Now enjoy the benefits of the same drive as desktop and notebook users! Use it with standard 3.5" 720 Kb and 1.44 Mb diskettes. Or with 120 Mb SuperDisk diskette media. Eliminate the need for connectivity kits and a notebook or desktop PC, just to transfer files to another diskette or hard drive. Use it to download large files from the Internet, run large graphics presentations, transfer files between your H/PC and notebook or desktop computer, and even to run or load programs from a floppy. Save costly space on your compact flash and PC memory cards, or free up system memory on your H/PC. Carry it anywhere. It's small enough to fit in your jacket pocket!



Compatible with Windows CE 2.0, Windows 95 and 98, Windows NT, Windows 3.X and DOS - use it with all of your computers.

ACCURITE®
TECHNOLOGIES INC.
48460 Lakeview Blvd.
Fremont, CA 94538-6532 USA

Tel: (510) 668-4900
Fax: (510) 668-4905
Web: www.accurite.com
Email: travel120@accurite.com

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmJacksInCorners

Card game where you try to place the face cards on the edges of the screen while removing all non-face cards a pair at a time.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

PalmTurnEmOff

Turn off all the "lights" on the 5x5 grid.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com

Pipe Game for Palm-size PC

A fast-flowing game of speed, strategy, and plumbing. With Bonus level, password, pause, and help.

Freeware: Download from Sales contact's Web site.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Ezos
Phone: + 02 387 20 00; Fax: + 02 387 20 10
Web: www.ezos.com/

Pocket-Jongg Version 3.01

Update of popular MahJongg-like puzzle game for Windows CE , with these new features:

- Full Support for new H/PC Professional Edition devices
- Autoscaling can now be switched off.
- Multiplayer mode via IrDA, LAN and Internet
- Modified Tournament Mode
- State recovery — Game can be closed at any time and restarts to the same state after restart
- Support for all Windows CE 2.0 and 2.1 Devices (H/PC, H/PC Pro and Palm-size PC)

Price: $9.95 Demo available from Contact's Web site.
Use with H/PC and Ps/PC
Contact: C-Labs
Phone & Fax: 425-868-0376
Email: jcr@c-labs.com
Web: www.c-labs.com

The Mill

One of the oldest and most wildly known board games, which has been played centuries and millennia ago by the Vikings, Japanese as well as Africans.

Shareware: ($19.90 registration fee) Download from either Website.
Use with H/PC and Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: KSE Software
Phone: +49 (211) 213 122 (Germany)
E-mail: sales@kse.de
Web: www.kse.de/

Tile Force

Tile Force consists of a tile pad on the left and tiles on the right. The object of the game is to move the tiles from the right onto the tile pad, in such a way that the adjacent faces of any tile have the same digit on them.

Shareware: ($9.95 registration fee) Download from either Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer: Ruksun Software Technologies, Ltd.
Phone: +91 212 678286 or +91 212 678288; Fax: +91 212 678866
E-mail: info@ruksun.com
Web: www.ruksun.com/

Widget Leisure Pack

Five innovative and exciting games to entertain and amuse you, including Chomper, Palmtris, Poker, Patience, Bandit, Reversi, and Castle. All games can be saved and continued at a later date.

Price: $39.95: Demo available from either Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Widget
Phone: +44 0 1438 818 818 (England)
Web: www.widget.co.uk/wince/lpreg.htm

XWord CE v.1.0

A crossword puzzle program that includes 30 puzzles with the program, and Puzzle Pak add-ons for unlimited hours of solving pleasure! Old Puzzle Paks can be removed from your system once you have completed them. You can even load Puzzle Paks onto your Storage Cards for space savings.

Price: $15
Use with H/PC
Sales contact: Mobilesoft
Web: www.mobilesoft.com
Developer Contact: Emerald Technology
E-mail: jshort@iag.net

Input

CalliGrapher 5.2

Update of a popular handwriting recognition program, now available for the Palm-size PC as well as the H/PC. CalliGrapher adds handwriting recognition for all styles - cursive, print or mixed. It also has a comprehensive spelling checker for all Windows CE applications. H/PC version has the option of turning the keyboard off.

Price: $49.95 Demo available from either Website.
(Upgrade from previous version: $19.95)
Use with H/PC or Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: ParaGraph International, Inc.
Phone: 800-810-0055 or 408-364-7700
Fax: 408-374-5466
E-mail: info@paragraph.com
Web: www.paragraph.com/

CalliGrapher Toolkit

Includes two useful tools for your Windows desktop PC:

InkFileFilter – lets you convert your ink notes and sketches, into Windows bitmaps, and GIFs.

DictionaryEditor —converts a CalliGrapher Dictionary into a dictionary list when dropped on your desktop. Note: CalliGrapher 5.1 or 5.2 is needed.

Freeware: Download from either Website.
Use on Windows 95/98 desktop PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: ParaGraph International, Inc.
Phone: 800-810-0055 or 408-364-7700
Fax: 408-374-5466
E-mail: info@paragraph.com
Web: www.paragraph.com/

PIM

CSI Outliner

Fast and easy way to organize notes, lists, to-do items, and meeting agendas on your Palm-sized PC or Handheld PC.

- Structure to your ideas.
- Expand and collapse subtopics for a better view.
- Use the simple drag-and-drop interface and auto-renumbering feature to arrange (and rearrange) entire outlines quickly and effortlessly.
- Embellish and illustrate your notes with sketches and images.
- Export to desktop applications.

Price: $39.95
Use with H/PC or Ps/PC
Contact: Casio Soft
Phone: 408-441-2000; Fax: 408-441-4175
E-mail: info@casiosoft.com
Web: www.casiosoft.com

Project Management

CSI Project

Project management software that lets you work with Microsoft Project-compatible project schedules directly on the Handheld PC or Palm-size PC. Includes fully functional GANTT charts, resource and budget allocations, milestones, priorities, and task linkages. Import and export Microsoft Project-compatible project schedules.

Price: $79.95
Use with H/PC or Ps/PC
Contact: Casio Soft
Phone: 408-441-2000
Fax: 408-441-4175
E-mail: info@casiosoft.com
Web: www.casiosoft.com

Reference

PalmBible

A full-featured Bible software program for Windows CE. Users can search using AND, OR, XOR and NOT operations combined with wildcards and phrases. For example, "faith*" finds occurrences of "faith", "faithful", "faithfulness" and other words beginning with the letters "faith." Passages can be copied to the clipboard for quick pasting into PocketWord or other applications. Noncontiguous passages ("Gen 1; John 1") can be copied in one simple step.

PalmBible Bibles contain all the front matter (preface, introduction, etc) and translator's footnotes found in printed Bibles. The text is organized into paragraphs with verse numbers clearly marked. Poetry is indented properly, and words of Christ can be displayed in red. The King James and New International versions are now available. The New American Standard, New King James and New Revised Standard Versions of the Bible will be available shortly, as will a version of PalmBible for Palm-size PCs.

Price: King James - $29.99
New International - $39.99
Use with H/PC and Ps/PC
Contact: Laridian
E-mail: info@palmbible.com
Web: www.palmbible.com

CEBible V. 2.0

Carry different versions of the Bible on Windows CE 1.0 or 2.0 Handheld PCs or Palm-size PCs. An intuitive user interface and compression engine allows speedy access to any passage in the Old or New Testaments (NIV, NASB, KJV versions available). Demo version is fully functional except that it contains only Genesis and Matthew.

Price: $40-$55 (depending on version of Bible)
Demo available at Sales contact/Developer's Website.
Use with H/PC or Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: SL Software
Fax: 317-596-9897
Web: www.slsoftware.com/

Dictionary

A multi-lingual translation dictionary for the Handheld PC, with the following language modules available: English-German roughly 3100 entries; English-French roughly 6400 entries; English-Dutch roughly 8300 entries; English-Spanish roughly 2600 entries; English-Spanish #2 roughly 8000 entries; English-Japanese roughly 1800 entries; English-Japanese #2 roughly 7400 entries; English-Portugese roughly 6100 entries; English-Mandarin Chinese. You buy the dictionary program and the language modules are free. Also available for free is MakeDict 1.5, a companion for Dictionary that lets you make your own dictionary databases.

Price: $18: Demo available at Sales contact or Developer's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: Evolutionary Systems Pty Ltd.
Phone: 510-658-5244
Web: www.evolutionary.net/

Sol! CE

Computes Sun Rise, Sun Set, and the length of the day, for any geographic location on the planet! Additionally the program computes the beginning and end of Civil, Nautical and Astronomical Twilight, and the length of the day with twilight.

Price: $4.95 Demo available at Sales contact or Developer's Web site.
Use with H/PCs
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: Gamewood
Email: wilborne@gamewood.net
Web: www3.gamewood.net/mew3/

Sports

SwimPro

SwimPro allows you to time multiple swimmers and calculate measurements of swimmers' pace using Windows CE-based Handheld and Palm-size PCs.

Price: $34.95 Demo available at either Website.
Use with H/PC or Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Cambridge Computer Corporation
Phone: 800-462-4481or 203-288-6004
Fax: 203-288-0009
Email: webmaster@cam.com
Web: www.cam.com/windowsce.htm

Utilities

bUSEFUL Utilities Pak

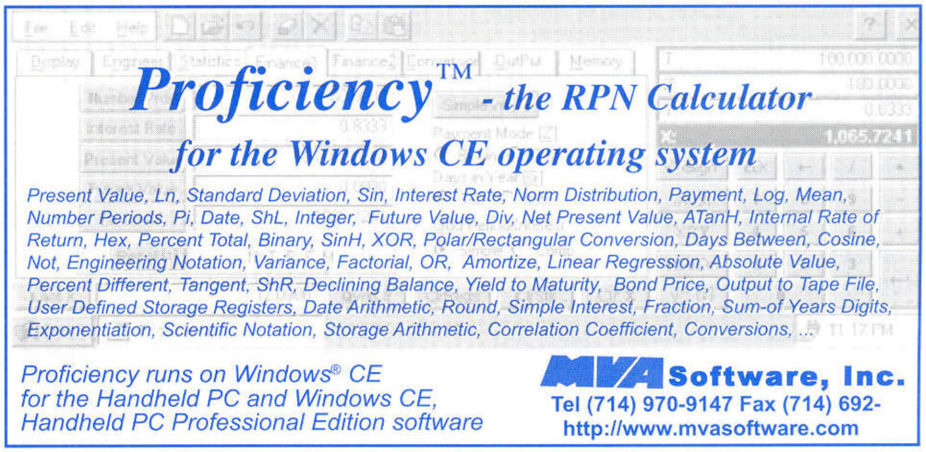
This suite of utilities from bSquare Technologies ensure smooth, efficient device operation resulting in greater user productivity. bUSEFUL comes in versions for all Handheld and Palm-size PCs, and includes the following individual programs:

bUSEFUL Backup Plus - lets you back up and restore vital data on your PC Companion. Back up and restore the entire device, or specific portions of it in under one minute. bUSEFUL lets you back up your data to your desktop PC or to a memory card in your PC Companion. The new H/PC Pro can also back up to and restore data from a network. bUSEFUL gives you the option to filter out certain files, verify data, configure multiple devices, and password protect your backup file.

bUSEFUL Analyzer — lets you analyze every detail of a device, including CPU information, power management, memory, video, and more. Includes standardized benchmark programs to compare device speed, and make adjustments to improve performance. All benchmark ratings can be compiled into a single benchmark called a "SquareMark" for a total device rating.

bUSEFUL Script — lets you automate routine tasks such as logging on to an ISP address, e-mail retrieval, newsgroup retrieval, device backup.

bUSEFUL FindSpace — identifies space wasting items, including duplicate files, invalid shortcuts, files older than a certain date or larger than a certain size, temporary files, cache files, recent document folder,


Proficiency™ - the RPN Calculator
for the Windows CE operating system

Present Value, Ln, Standard Deviation, Sin, Interest Rate, Norm Distribution, Payment, Log, Mean, Number Periods, Pi, Date, ShL, Integer, Future Value, Div, Net Present Value, ATanH, Internal Rate of Return, Hex, Percent Total, Binary, SinH, XOR, Polar/Rectangular Conversion, Days Between, Cosine, Not, Engineering Notation, Variance, Factorial, OR, Amortize, Linear Regression, Absolute Value, Percent Different, Tangent, ShR, Declining Balance, Yield to Maturity, Bond Price, Output to Tape File, User Defined Storage Registers, Date Arithmetic, Round, Simple Interest, Fraction, Sum-of Years Digits, Exponentiation, Scientific Notation, Storage Arithmetic, Correlation Coefficient, Conversions, ...

Proficiency runs on Windows® CE
for the Handheld PC and Windows CE,
Handheld PC Professional Edition software

MVA Software, Inc.
Tel (714) 970-9147 Fax (714) 692-
http://www.mvasoftware.com

and e-mail attachments.

bUSEFUL List Plus — a powerful list program that lets you organize your lists in a hierarchical structure, making it easy to list all of the elements of a project, and check them off one by one. Includes "user-friendly" features such as project completion tracking, sorting by priority, support for hyperlinks, alarms, and more. Transfer lists to any other Windows CE device via IR.

bTASK — lets you navigate between applications and close unused applications. Displays information on battery status and remaining storage space.

bUSEFUL Launch — lets you create a customized start menu for fast access to your most-used programs. Also lets you navigate the file system, menus, and more.

bUSEFUL HTML Editor — lets you edit HTML files from the convenience of a PC Companion. Create, edit and save HTML files (.HTM, .HTML) as well as Windows CE Help files (.HTC, .HTP). Includes "find and replace" function, wizards for tables, fonts, images, and anchors, support for selectable fonts and more.

bUSEFUL UUEncode — lets you convert files to ASCII for Internet transmission.

bFIND — a comprehensive device search function that lets you search all information on a Handheld or Palm-size PC - file folders, file contents, databases, contacts, and more.

bUSEFUL Notepad — lets you create and edit notes quickly and easily.

bUSEFUL MoonPhase — lets you track the phases of the moon and more.

Price: $79.95
Use with H/PC and Ps/PC
Demos of many of the individual programs in this package are available on the developer's Website
Contact: BSQUARE Corporation
Phone: 888-820-4500 or 425-519-5900
Email: sales@bsquare.com
Web: www.bsquare.com

Dial4Me 3.0

Lets you organize and dial phone numbers from your PC Companion. New version has an improved user interface, dials using your PC Companion's speaker tones, or through optional modems.

Price: $17.95 Demo available from contact's Website.
Use with H/PC or Ps/PC
Contact: Sixxac
Email: info@sixxac.com
Web: www.sixxac.com/ce

CSI PowerPack

Essential utility tools for your PC Companion, including the following:

- CSI DeskType — Use your PC keyboard to enter text directly onto any Handheld PC or Palm-size PC. Especially valuable to Palm-size PC owners.
- CSI File Explorer — Quickly find, view, and open applications and documents on your Windows CE device using an intuitive and powerful interface.
- CSI Task Switcher — Switch instantly between open applications, or close unused applications.
- CSI Screen Zoom — Enlarge your view of any portion of a Windows CE device.
- CSI Image Viewer — View bitmaps, JPEGs, and CASIO digital camera images directly on your Handheld PC or Palm-size PC. Enlarge or reduce a displayed image and convert between standard image formats.
- CSI Screen Capture — Captures any screen on your Handheld PC or Palm-size PC to a bitmap file.

Price: $39.95
Use with H/PC or Ps/PC
Contact: Casio Soft
Phone: 408-441-2000; Fax: 408-441-4175
E-mail: info@casiosoft.com
Web: www.casiosoft.com

ActiveTask

Adds an "ActiveTask" icon to your system tray. Tap on the icon and get a list of the applications that are active. Makes it easy to view, and close applications.

Price: $9.95 Demo available at either Website.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Queen Image
Web: www.queenimage.com/

Bmp2bp

Convert to and from the .BMP (bitmap) and .2BP (pocket bitmap) file formats.

Freeware : Download from Sales contact's Website
Desktop application
Sales contact: Tucows CE Monster
Web: www.cemonster.com

CeAppBar

Lets you launch up to 100 different applications from a button bar to your H/PC.

Price: $9.95 Demo available at either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: Queen image
Web: www.queenimage.com/

Convert

Convert weight, temperature, length, area, volume and currency on the Palm-size PC. The user can specify names and conversion rates for up to three currencies.

Freeware: Download from either Website
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Web: dmoore1768.home.mindspring.com/con vert.htm

DBZapper

Deletes databases from the Handheld PC. This utility should be used with care as once a database is deleted it cannot be recovered. For safety reasons once a database is selected for deletion the first four characters of the database name must be typed into a text box before the database is actually deleted.

Freeware: Download from either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Stargate Software
Web: www.stargate-software.co.uk/home.htm

Dutilities

A combination of four different programs that let you setup the start programs on your handheld, adjust the sound, change the touch keys (HP 620LX), and view the amount of memory left.

Freeware: Download from either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: D Collections
Web: www.dcollections.com/

FreeMem 1.0

Gives a running total of the free file and program memory (in KBytes). The dialog can be left minimized on the task bar to give a constantly visible indication of your free space. The dialog and task bar values are updated every eight seconds. This is an unsupported program.

Freeware: Download from either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Surerange Analysis Ltd.
Fax: +44 0 1483 304960
Email: info@surerange.com
Web: www.surerange.com

Image Expert CE

Lets you view images from a digital camera on your H/PC. Annotate them with voice, ink or text and share them via e-mail and IrDA. Users will also be able to automatically synchronize their H/PCs to the Windows 95/98/NT version of Image Expert. Image Expert CE provides a direct serial interface to many of the best selling brands of digital cameras. Via removable media (CompactFlash and PC Cards) Image Expert CE is compatible with any camera that stores images in JPEG (JPG) or Bitmap (.BMP) formats.

Price: $79.95 Demo available from either Website
Use with H/PCs
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Sierra Imaging
Phone: 408-461-2070

Fax: 408-461-2072
E-mail: marketing@sierraimaging.com/
Web: www.sierraimaging.com/

MyTools

This utility displays the current day, memory status, and battery status in the taskbar area.

Freeware: Download from either Website
Use with H/PC and Ps/PC
Sales contact: Tucows CE Monster
Web:www.cemonster.com
Developer Contact: Micro Cheng
Web: http://home.hkstar.com/~micro/home.html

QITimer

Adds four timer utilities to your H/PC: stop watch, chess clock, metronome and alarm.

Price: $9.95 Demo available at either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Queen image
Web: www.queenimage.com/

PowerTime

Lets you keep track of battery usage on Windows CE devices. PowerTime maintains information about your current and past battery types, usage, estimated time left, and more. Features include: easy installation process; system tray icon displays gauge with remaining % of power; low power alert; supports rechargeable batteries; battery labeling, so you can set the name and type of the batteries you are using; statistics with detailed information on battery usage; can play a (warning) sound whenever your device is turned on.

Price: $17.95 Demo available at either Website
Use with H/PC and Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Sixxac
E-mail: info@sixxac.com
Web: http://sixxac.com/

PXLCSV

Lets you convert from Pocket Excel's PXL format to the comma-separated value, CSV, text format.

Freeware: Download from either Website
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Web: www2r.meshnet.or.jp/ (Japanese language site)

SecretPad

Protect your documents and sensitive material from intruders and unauthorized individuals.

Freeware: Download from either Website
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Web: http://member.nifty.ne.jp/
(Japanese language site)

Snippet Force

Lets you create a list of frequently used phrases, paragraphs, e-mail addresses, macros, etc. and invoke them in any application just by tapping on a short abbreviation from the Snippet Force panel. Snippet Force also supports a limited set of macro script commands allowing the user to to insert current time and date in the desired format.

Price: Free pre-release (beta) version from Website
Use with Ps/PC
Contact: Ruksun Software Technologies, Ltd.
Phone: +91 212 678286 or +91 212 678288
Fax: +91 212 678866
E-mail: info@ruksun.com
Web: www.ruksun.com/

Tascal Filer

File manager utility that makes it easier to copy and paste files between directories.

Freeware: Download from Sales contact's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Web: www2r.meshnet.or.jp/
(Japanese language site).

Tascal RegEdit

A registry editor for Windows CE devices, similar to the Windows 95/NT registry editor. Use with great caution! Now supports both H/PCs and P/PCs.

Freeware: Download from Sales contact's Website.
Use with H/PC or PsPC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Web: www2r.meshnet.or.jp/
(Japanese language site).

Tascal Search

Lets you enter a text string and search different file types for matches.

Freeware: Download from Sales contact's Website.
Use with H/PC or PsPC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Web: www2r.meshnet.or.jp/
(Japanese language site).

Tascal TaskMan

Close applications on the Palm-size PC.

Freeware: Download from Sales contact's Website.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Web: www2r.meshnet.or.jp/
(Japanese language site)

Tascal Tools Vol.1

- Tascal Filer Ex: A file manager program similar to Windows Explorer, with folder tree and two screen modes.
- Tascal Address Book Utility: An Address Book data conversion utility.
- Tascal Folder Sync: A folder synchronization utility that checks a files time of modification and synchronizes it as needed with a copy on a desktop PC.
- Tascal Calc: Advanced scientific calculator for almost all levels of math, from algebra to advanced calculus.

Shareware: ($20 registration fee) Download from Sales contact's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Shareware registration e-mail (in U.S.): TascalReg@CELair.com.
Web: www2r.meshnet.or.jp/
(Japanese language site)

Tascal WPC

Swap H/PC desktop backgrounds on the fly.

Freeware: Download from Sales contact's Website.
Use with H/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Web: www2r.meshnet.or.jp/
(Japanese language site)

Seminars/Training

Windows CE Enterprise Seminars

Learn how other companies are making use of Windows CE as a platform for mobile enterprise solutions, and see the newest addition to the Handheld PC line.

The morning session is dedicated to IT professionals and business decision makers.

Learn how other companies are making use of Windows CE to solve business problems for mobile professionals. Meet technology partners involved in developing the latest Windows CE enterprise solutions and see demonstrations of these solutions.

The afternoon technical sessions are for solution providers and corporate developers.

Learn how to expand your current business and enable mobile solutions by developing custom applications based on Windows CE. Also, learn how to structure integrated Windows CE solutions using existing knowledge of tools and products such as Windows, Office, and the BackOffice family - including compatibility with SQL Server 7.0.

Price: free
Call or visit Microsoft's Website for 1999 dates
Contact: Microsoft
Phone: 888-282-3953; Fax: 206-441-6369
E-mail: windowsce@crgnet.com
Web: www.microsoft.com/windowsce/hpcpro/community/events.asp

Developer

Hardware

WinCE CardPC BSP

A Windows CE board support package (BSP) for the micro-motherboard. The WinCE CardPC BSP lets embedded system designers design Cell CardPC applications using the Windows CE operating system.

Contacts: Cell Computing, Inc.
Web: www.cellcomputing.com
VenturCom, Inc.
Web: www.vci.com

PlusTV Evaluation Kit 1.0

A comprehensive x86 platform for Windows CE set-top box development. The PlusTV Evaluation Kit lets you design and test hardware components, develop Windows CE applications, demonstrate a prototype, and gather in-depth expertise in the Windows CE operating system. The kit includes a complete x86 system, including Intel Pentium processor, the Microsoft Windows CE operating system, set-top related peripherals (including a TV tuner, video accelerator card for NTSC/PAL support, and infrared keyboard and mouse), device drivers, sample source code, and documentation. All of the components and software are pre-tested and pre-assembled functional configuration that has already been used by nearly a dozen Rachis partners and customers.

As an official Microsoft Windows CE Systems Integrator, Rachis also offers consulting services, integration kits, and software applications exclusively for home entertainment (TVset-top) devices.

Contact: Rachis Corporation
Phone: 978-461-9984; Fax: 978-461-9986
E-mail: sell_it@rachis.com
Web: www.rachis.com

Publications

Professional Visual Basic Windows CE Programming

Provides software developers with the expertise and techniques needed to develop applications for Windows CE PC Companions using the Visual Basic for Windows CE Toolkit. The book describes the features of the VBCE Toolkit, including ADO CE; step-by-step, and will help programmers avoid common pitfalls of using the Toolkit.

- Using the Visual Basic for CE add-in.
- ActiveX controls expansion set, including six demonstration programs.
- Manipulate files in CE applications.
- Creation and use for databases on PC Companions using ADO CE.
- Moving data between the handheld and desktop PC.
- Creating help systems for your CE applications.
- VBCE Toolkit bugs and how to get around them.
- Design implications of the handheld environment

The book assumes that the main audience will already be VB proficient. Developers need a PC running Windows NT 4.0, Visual Basic 5.0 and the Windows CE Toolkit for Visual Basic.

Price: $49.99 (U.S.)
Use with H/PC, Ps/PC and desktop
Contact: Wrox Press
Phone: 800 USE WROX
Web: www.wrox.com
Can also be purchase on line at www.amazon.com

Inside Microsoft Windows CE

A look at the system architecture of the Windows CE operating system, covering Handheld PCs, Palm-size PCs, Auto PCs, Web televisions, Web telephones, DVD and multimedia devices, and more. Provides conceptual frameworks to help you understand your design options, and real-world examples that demonstrate the flexibility and potential of Windows CE.

Price: $29.99
Contact: Microsoft Press
Phone: 800-MSPRESS; Fax: 800-826-5399
Web: http://mspress.microsoft.com/findabook/buy/ (location of retail sources)

Services

ARM Processors and integration services

ARM has created a family of processors specifically optimized for Windows CE. These include the ARM720T, ARM920T, and StrongARM processors. In addition, ARM provides integration services dedicated to maximizing Windows CE-based solutions. These services include Design Consulting, Software Development and Design Tools.

Contact: ARM Ltd.
E-mail: info@arm.com
Web: www.arm.com

Software

Pervasive.SQL

A full-featured database engine for developers of Windows CE data applications. Developers can choose from a variety of Pervasive.SQL components. Other features include the following:

- Less than 50K memory footprint to run on the smallest Windows CE devices.
- Mobile users can collect data, manage data entry conflicts, remotely partition the database, and synchronize data with a central data store.
- Client/server access to data from the desktop environment reduces application development time.
- ODBC and OLE/DB interfaces let developers use any of a number of decision support tools.
- Modular/scalable architecture lets developers pick and choose components.
- The Pervasive.SQL for Windows CE Design Partner Program provides developers with the Windows CE database solution as well as supporting tools.

Contact: Pervasive Software
Phone: 800-287-4383 or 512-794-1719
E-mail: info@pervasive.com
Web: www.pervasive.com

Mobile SDK

The Mobile Software Developer Kit uses Phoenix's SoftPower Technology to provide software foundations for battery-operated devices. These increase battery life, improve power management and speed the development of Windows CE systems.

Contact: Phoenix Technologies Ltd.
Web: www.phoenix.com

Icebreaker database SDK

A small footprint database for the Windows CE operating system (PalmOS and EPOC versions also available). A fully featured database engine that fits in less than 30Kb. Icebreaker searches for data using a highly efficient search structure that replaces indexes, saving significant space and improving performance. Includes full BLOB-management and native complex data structures.

Icebreaker is platform independent and will be operational under Win95, WinNT. All I/O management is centralized in one single module. The Icebreaker Software Developer Kit will be marketed to the embedded system market and OEM market.

Contact: Birdstep Technology
Phone: +47 22 83 67 10 (Norway); Fax: +47 22 83 67
E-mail: hello@birdstep.com
Web: www.birdstep.com

SuperSpeed C++ math library

A Windows CE third-party tool for embedded systems applications. The library can be used in all C++ compilers on all 32- and 674-bit microprocessors. The library contains fast additions and subtractions. The library also contains ultra fast multiplies, divisions, square roots, reciprocals, logarithms, exponentials, powers, trig functions, inverse trig functions and other fast scientific and graphics functions. The SuperSpeed library is up to 44 times faster than conventional floating point software for tough graphics, multimedia and control applications.

Contact: Log Point Technologies Inc.
Phone: 650-967-3974; Fax: 650-967-1642
E-mail: info@logpoint.com
Web: www.logpoint.com

Pocket GraphWorX CE

Industrial automation software tool used with embedded controllers and in industrial visualization applications. Users can monitor operations in real-time and simply zoom in on graphical representations of processes and access historical information from corporate databases. Pocket GraphWorX CE offers full, dynamic animation of industrial processes. The applications are developed on Microsoft Windows 95, Windows 98 or Windows NT systems, which allows previews and step-by-step animations. The applications developed are then simply dragged to a Windows CE file folder for downloading to the remote CE compliant device. Pocket GraphWorX CE will be available in the first quarter of 1999.

Price: not yet announced.
Contact: Iconics
Phone:508-543-8600
E-mail: info@iconics.com
Web: www.iconics.com

KSE Midnight

KSE Software has announced the beta release of its new Windows CE database program. Midnight for Windows CE supports relational databases, offers an optimized database kernel (<100k) as well as an extensive C/C++ and Active X-Interface.

For Beta-Testing please contact beta@kse.de
Contact: KSE Software
Phone: +49 211 21 31 22; Fax: +49 211 21 31 29
Email: sales@kse.de
Web: www.kse.de/

C&T HiQVideo Display Driver

A Windows CE display driver for the Chips and Technologies HiQVideo line of LCD controllers, including the 65550, 65554, 65555, 65560, and 69000. Provides support for ALL display modes on all host processors, on all panels. Supports all Windows CE CPU's, including x86, ARM, MIPS, SHx, PPC.

Price: varies
Contact: Intelligraphics, Inc.
Phone: 972-479-1770; Fax: 972-479-1760
E-mail: sales@intelligraphics.com
Web: www.intelligraphics.com/

CEfusion

A set of software tools for building on-line wireless applications for Windows CE based devices. CEfusion Professional includes Windows CE Client, Communications Server, OdbcAgent, FileAgent, PrintAgent, PocketQuery Applet, and an example application. CEfusion Enterprise includes the above and TermAgent, MqAgent, MtsAgent, and CustomAgent. For more information, contact the developer.

Contact: Odyssey Software Inc.
Phone: 714-581-8344; Fax: 714-581-0352
Web: www.odysseysoftware.com/

CE Xpress Kits

System integration software products compatible with the new Windows CE 2.1 operating system, including both source code versions and new inexpensive binary versions. Each product includes the software technology necessary for timely development and deployment of embedded systems running Windows CE 2.1. The kits are supported on platforms based on the AMD Elan SC400, Intel SA-1100, Cyrix MediaGXm 5520/5530 and the Motorola Power PC 821/860.

The Binary Kits provide an inexpensive evaluation, application development and PCI/ISA expansion bus development infrastructure. Using the Binary Kits, OEMs and third party developers can run application benchmarks on the target platform, complete system tradeoffs, and develop PCI/ISA based hardware and software expansion.

The CE Xpress Adaptation Kits provide a complete development environment, with source code, enabling access to the OS to provide virtually unlimited customization. The Adaptation Kits also include sources for drivers conforming to a Portable Driver Model allowing developers to choose PCI or ISA based peripherals from a broad and growing library of drivers that operate across both RISC and CISC processor platforms. Both kits interface with the Microsoft toolkits, the Embedded Toolkit (ETK) and 2.1 Enhancement Pack, to provide a complete device software development environment.

Price: Xpress Binary Kits — $495 (individual license)
Xpress Adaptation Kits — $19,995 (site license)
Run-time royalties are based on kit type and volume
Contact: BSQUARE Corporation
Phone: 888-820-4500 or 425-519-5900
Email: sales@bsquare.com
Web: www.bsquare.com

Device Mosaic Web browser

Spyglass has enhanced its Device Mosaic Web browser to work with the new Handheld PC Professional Edition software and Windows CE 2.1 operating system. Device Mosaic is a full-featured Web browser, under 1 MB, that is fully HTML 3.2 compliant with support for JScript, SSL, frames, tables, and JPEG and animated GIF images. In addition, it can be extended to include support for technologies such as XML and Java. The browser technology has been specifically designed to enable fast, straightforward user interface customizations. It can be used as a standalone browser or as the foundation of multiple applications.

Windows® CE
Pilot, Geos, Newton & Zaurus
✓ Custom Development
✓ Messaging Applications
Virtual Courier™ – cc:Mail
MS-Mail/Exchange connection.
Exchange forms & Lotus Notes
✓ International Porting
MicroBurst, Inc.
15732 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE (301) 330-2995
FAX (301) 330-8609
E-MAIL: markf@mburst.com

Price: varies
Contact: Spyglass
Phone: 408-399-8800; Fax: 408-399-4395
E-mail: info@spyglass.com
Web: www.spyglass.com

NS Basic/CE

A complete BASIC programming language toolkit that runs entirely on a Windows CE device. It uses Microsoft's standard VBScript engine as its core, combined with extensions to create a complete development and runtime environment. NS Basic/CE provides a full, modern implementation of BASIC, with proper subroutines, variant data types and no line numbers. VBScript is built into the ROM of many H/PCs, keeping memory requirements low.

Price: $99.95
Use with H/PC
Contact: NS Basic Corporation
Phone: 416 264-5999 or 888 NS BASIC
Fax 416 264-5888
E-mail sales@nsbasic.com
Web: www.nsbasic.com/

NumeriPad Input Panel

This lets developers add a numeric input pad to a Palm-size PC application, making it easier to enter data into an application focused on numeric data entry.

Price: $7.95 Demo available at either Website.
Use with Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer contact: Developer One
Phone: 414-423-7276; Fax: 414-423-7065
E-mail: sales@developerone.com
Web: www.developerone.com/

Outside In

Filtering technology that lets developers create Windows CE applications that can view a variety of attachments. Outside In supports over 20 word processing, spreadsheet and presentation formats, including WordPerfect and Lotus 1-2-3. It lets developers select supported file formats and provides Unicode support for single- and double-byte character sets. Outside In is not server dependent; e-mail messages can originate from a server that is not Windows CE aware.

Price: Varies
Contact: Inso
E-mail: oemchi@inso.com
Web: www.inso.com/develope/oiforwin.htm

Pocket Scheme

A tiny Scheme interpreter running on Windows CE-powered Handheld and Palm-size PCs. It supports file creation and manipulation, regular expression operations on character strings, and TCP/IP networking. The package includes a small parenthesis-balancing text editor, and (on the H/PC) a grep utility itself written in Pocket Scheme. Pocket Scheme makes an excellent companion to the Friedman/Felleisen tutorial introduction to Scheme programming, The Little Schemer, or its sequel, The Seasoned Schemer (available at www.amazon.com).

Freeware: Download from either Website.
Use with H/PC and Ps/PC
Sales contact: Tucows CE Monster
Web: www.cemonster.com
Developer Contact: Angry Graycat Designs
Web: www.angrygraycat.com/

Prism 2.1

Spyglass Prism 2.1 installs on Windows NT 4.0 or Solaris 2.5.1 servers and optimizes Web content for a device, like an H/PC or Ps/PC, that is accessing the server. Prism 2.1 is up to 3.5 times faster than its previous version. Other enhancements include:

- Converting Progressive JPEGs: To accommodate the significant number of progressive JPEGs on the Web that either cannot be interpreted by a device or are too time consuming on the wireless network, Spyglass Prism 2.1 will convert these to static images.
- Optimize for speed or image quality: Administrators can select between quality and performance when scaling images to their device.
- Greater Filtering: Through the use of SurfWatch filters, it is possible to set up a custom list of sites that Spyglass Prism should block. If administrators want to be more restrictive, they can block the entire Internet, except for a list of sites they specify. Administrators will also be able to customize SurfWatch filters by blocking or allowing individual sites.
- Japanese Support: Spyglass Prism 2.1 can now perform conversions on JIS-encoded HTML documents.

Price: Call
Phone: 408-399-8800; Fax: 408-399-4395
E-mail: info@spyglass.com
Web: www.spyglass.com

Smart IP 1.1

Lets Internet and Intranet applications run efficiently and reliably over mobile networks without modification.

- Run standard TCP/IP applications over all wireless networks with no modification
- Develop optimized wireless applications using standard Winsock API
- Improve performance over native TCP/IP by cutting packet counts by as much as 80% and reducing the amount of data being sent by 30-to-60%
- Optional SDK provides capability to create Intelligent Protocol Agents that streamline application transactions

Price: $varies
Contact: Nettech Systems
Phone: 609-734-0300
Web: www.NettechRF.com

WinDK

Toolkit to help developers quickly and inexpensively create device drivers for Windows CE embedded systems software. BlueWater Systems also offers device driver development services and the WinDK Device Driver Development Kit for Windows NT and WDM.

Free beta demo available at Contact's Website.
Contact: BlueWater Systems, Inc.
Phone: 800-962-2114 or 425-771-3610
Fax:425-771-2742
E-mail: info@bluewatersystems.com
Web: www.bluewatersystems.com

Windows CE 2.1 Enhancement Pack for W/CE Embedded Toolkit

Lets C/C++ developers create advanced embedded solutions based on the Windows CE 2.0 and 2.1 operating systems. Includes sample device driver code, sample application code, C/C++ cross-compilers, and assemblers. Also includes tools that let you put your configured Windows CE OS and application code into an EPROM, or to download it into your target platform and debug it from your development workstation using the remote debugging tools. The Windows CE 2.1 Enhancement Pack requires that Microsoft Windows CE Embedded Toolkit for Visual C++® 5.0 be installed on your development workstation. The Windows CE 2.1 Enhancement Pack is included in the updated Windows CE Embedded Toolkit for Visual C++ 5.0.

Price: Current uses of the ETK: $14.95
Windows CE ETK for Visual C++ 5.0: $499
Contact: Microsoft software resellers.
List of distributors and resellers available at:
Web: www.microsoft.com/windowsce/embedded/referrals/etk.asp

Training

W/CE Developers Workshop

Presents the features, tools, development options, and general information needed to begin CE design. Windows CE Workshop is for embedded system and software developers, design managers, engineering managers, and product managers. Workshop topics include CE Background, OS Details/-Components, Microprocessor Overview, ETK, Driver Development, and using COM for device abstraction.

Price: $995
Contact: Annabooks
Phone: 800-462-1042 or 619-673-0870
Fax: 619-673-1432
E-mail: workshops@annabooks.com
Web: www.annabooks.com/ce_home.htm

PC Companions At A Glance

Handheld PCs and H/PC Pros

This section combines H/PCs and H/PC Pros, and includes all H/PC Pros with information available. The following additional manufacturers are announced on the Microsoft Website as supporting Windows CE Handheld PC Professional Edition: Casio, Compaq, Everex, Fujitsu, and Hitachi. The following manufacturers have not been formally announced, but are rumored to be supporting the Handheld PC Professional edition: IBM and Featron.

CASIO

CONTACT your local Casio dealer or Casio, Inc.; Phone (USA): 201-361-5400; Fax: 201-361-3819; Web: www.casio-usa.com/hpc/

Casio CASSIOPEIA A-20 — $599.95
HARDWARE: 80 MHz Hitachi SH-3 CPU; 8 MB RAM; 640 x 240 backlit display with 4 shades of gray; QUERTY keyboard, serial port, IrDA infrared port; Type II PC Card slot; CompactFlash Card slot; built-in microphone and speaker; two AA Alkaline batteries; backup battery; AC adapter; user guides; CD ROM with sample software.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications. Software on disk or CD ROM: QuickNotes; pcANYWHERE CD; E-Mail Access; Financial Consultant Calculator; bFAX Pro; IntelliSync; Socket Connectivity product; PageSoft Pro; GTE Personal Sender; Tetris; Casio QV-Link; Casio Project Scheduler; Casio Paint-Atlas; Casio Sound-Vega voice memo; Casio Voice Applications voice command; Casio Teleconferencing Software; Casio Easy File Tool; Financial Consultant Calculator;
ACCESSORIES: PC Docking Cradle; AC adapter; Rechargeable Battery Pack; Windows CE 2.0 upgrade kit for CASSIOPEIA A-11 and A-11+.

COMPAQ

CONTACT your local Compaq dealer or Compact Direct Plus; Phone (USA): 800-888-5858; Web: www.compaq.com

Compaq C-Series 2010 c (color screen) — $799
Compaq C-Series 810 (gray-scale screen) — $499
HARDWARE: 75MHz MIPS RISC CPU, 16MB ROM, 8MB or 20MB RAM (expandable to 20 or 32 MB), 640 x 240 mono or color touch sensitive screen; integrated 33.6 modem (optional in some countries); Type II PC Card slot; powered by two Alkaline AA batteries (Mono) or NiMH rechargeable battery pack (standard on model 2010c) or A/C adapter (included); serial cable; user guides; CD ROM with sample software.
BUILT-IN SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications. Software on disk or CD ROM: not announced.
ACCESSORIES: Battery pack; Cradle; Auto sync Cable; Stylus 3-Pack; 16MB Ram Expansion; Auto Adapter; Carrying Case; Slip Case; Portfolio Case; AC Adapter; VGA PC Card.
HARDWARE: 75MHz MIPS RISC CPU, 16MB ROM, 8MB or 20MB RAM (expandable to 20 or 32 MB), 640 x 240 mono or color touch sensitive screen; integrated 33.6 modem (optional in some countries); Type II PC Card slot; powered by two Alkaline AA batteries (Mono) or NiMH rechargeable battery pack (standard on model 2010c) or A/C adapter (included); serial cable; user guides; CD ROM with sample software.
BUILT-IN SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications. Software on disk or CD ROM: not announced.
ACCESSORIES: Battery pack; Cradle; Auto sync Cable; Stylus 3-Pack; 16MB Ram Expansion; Auto Adapter; Carrying Case; Slip Case; Portfolio Case; AC Adapter; VGA PC Card.

ERICSSON

CONTACT: Ericsson Mobile Communications; Web: www.ericsson.com

Ericsson Mobile Communications MC16 — $749
HARDWARE: Based on Hewlett-Packard's HP 360LX (see HP section for details). Other features include: Built-in infrared modem lets you communicate with an Ericsson cellular phone to; send and receive faxes, e-mails, browse the Web; send quick SMS messages to mobile phones and fax machines; synchronize the phone book with your Ericsson phone.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications. "My Ericsson Phone" application for phone book management and GSM short messaging capability for the In-Box. BFax Professional and Month-at-a-Glance.
ACCESSORIES: Information about specific MC16 accessories not available, but they should be similar to the HP 360LX's accessories. The MC16 is compatible with the following Ericsson mobile phones (model numbers): GF 788, GF 768, GH 688, GA 628, GH 398, GH 388, GF 388, GA 318, PF 768, PH 388, CF 788, CH 388, CF 388, CA 318, CF 688, CA 638.

HEWLETT-PACKARD

CONTACT your local HP dealer or Hewlett-Packard Company; Phone (USA): 800-443-1254; Web: www.hp. com/handheld

PRO!

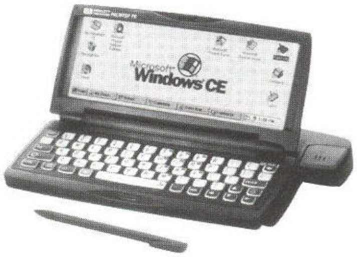
HP Jornada 820 H/PC Pro – $999
HARDWARE: 190MHz StrongARM RISC CPU; 16MB RAM; 16MB ROM; 8.2" (diagonal) 640x480 color VGA screen with 256 colors (not a touch screen); touch-typeable QWERTY keyboard with integrated touch mouse pad; internal 56k modem; serial port; fast IrDA infrared port; VGA monitor port; modem port; Universal Serial Bus port; Type II PC Card slot; Type II CompactFlash slot; lithiium-ion rechargeable battery pack; backup batteries; AC adapter; synchronization cable; phone cord, quick start and users guides.
SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional Hewlett-Packard software includes Jornada Viewer, Jornada Dialup, Jornada Hot Keys setup, Jornada Settings utility, Jornada Show, Jornada Backup, LandWare's OmniSolve financial calculator, bFAX Pro, bVIEW, bFIND, Proxim RangeLAN-2 software driver, HP TopTools Agent, TrueSync CE 2.0 for REX and REX Pro users, Microsoft Java Virtual Machine, Citrix ICA client, and the INSO file viewer.
ACCESSORIES: Synchronization cable, sync/AC cable, AC adapter, standard lithium-ion rechargeable battery pack; extended life lithium-ion rechargeable

battery pack, parallel printer cable, serial adapter, 16MB RAM upgrade, 4MB and 10MB CompactFlash cards with PC Card adapter.

HP 660LX palmtop PC — $999

HP 620LX palmtop PC — $799

HARDWARE: 75 MHz CPU; 32 MB RAM (HP 660LX); 16 MB RAM (HP 620LX); 640x240-pixel 256 color screen; QWERTY keyboard; 56 kbps fax/modem card (with 660LX only); serial port; IrDA infrared port; Type II PC Card slot; CompactFlash Card slot; Lithium-Ion rechargeable battery pack; 3V CR2032 coin cell backup battery; microphone and audio speaker; synchronization cable; docking cradle; AC adapter; user guides; CD ROM with sample software.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications; bFAX; bFIND; Financial software; Remote Networking and Terminal Application software; Calendar viewing utilities. Software on disk or CDROM: H/PC Explorer version 2.0; Translation software to convert HP 100/200LX & OmniGo 100/120 appointment/ phone books to H/PC formats; Trial software from independent software vendors.
ACCESSORIES: HP CompactFlash Memory plus PC Card slot adapter: 4MB - $89, 10MB - $149; Spare Cradle - $29.99; External Battery Charger - $79; Pack of 3 pens - $9.99; VGA Out PC Card - $119; Standard Li-Ion Battery Pack - $69; Extended Li-Ion Battery pack - $119; Sync Cable - $14.99; Leather Case - $69.00.



HP 360LX Palmtop PC — $599

HARDWARE: 60 MHz CPU; 8 MB RAM; 640x240 monochrome screen with "natural-white" backlighting; QWERTY keyboard; serial port; IrDA infrared port; Type II PC Card slot; CompactFlash Card; 3V CR2032 coin cell backup battery; user guides; CD ROM with sample software.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications; bFAX; bFIND; Financial software; Remote Networking and Terminal Application software; Calendar viewing utilities. Software on disk or CDROM: H/PC Explorer version 2.0; Translation software to convert HP 100/200LX & OmniGo 100/120 appointment/ phone books to H/PC formats; Trial software from independent software vendors.
ACCESSORIES: HP CompactFlash Memory plus PC Card slot adapter (see 620 LX accessories); Sync Cable - $14.99; Spare Cradle - $29.99; Pack of 3 pens - $9.99; Leather Case - $69.00.

HP 320LX Palmtop PC - Discontinued

HITACHI

CONTACT your local Hitachi dealer or Hitachi Home Electronics; Phone (USA): 800-HITACHI; Web: www.hitachi-ce.com

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(Email) cardinfo@pretec.com

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Hitachi HPW-200EC Handheld PC — $899

HARDWARE: 100 MHz Hitachi SuperH SH3 CPU; 16 MB RAM (expandable to 32MB); 12 MB ROM; 8.1" diagonal 640 x 240 touch screen; 256 color LCD display; large touch-typeable 74-key keyboard; 33.6 kbps built-in software modem; VGA-out port and IrDA interface; Type II PCMCIA slot; Compact Flash card slot; rechargeable Lithium-Ion battery pack; hot start program launch keys; built-in microphone, speaker and voice recorder; weighs less than 2 lbs with battery pack.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications. Software on disk or CD ROM: not announced.
ACCESSORIES: AC Adapter; Serial Cable; Docking Cradle; Lithium-Ion Battery Pack.

Hitachi HPW-20E8M Handheld PC — $599

HARDWARE: 80 MHz Hitachi SuperH SH3 CPU; 8 MB RAM; 16 MB ROM; 7.1" diagonal 640 x 240 touch screen; 16 gray-scale LCD display; 69-key QWERTY keyboard; 21.6 kbps internal software modem; VGA-out port and IrDA interface; Type II PCMCIA slot; Compact Flash card slot; rechargeable Ni-MH battery pack; quick launch keys; built-in microphone, speaker and voice recorder; weighs approximately 1 lb.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications. Software on disk or CD ROM: not announced.
ACCESSORIES: AC Adapter; Serial Cable; Docking Cradle; Lithium-Ion Battery Pack

LG ELECTRONICS

CONTACT local LGE dealer or LG Electronics Customer Information Center; Phone (USA): 800-243-0000; Web: www.lgphenom.com

LG Phenom Express - $899

HARDWARE: 100 MHz Hitachi Super H SH3 CPU; 32 MB RAM, 16 MB ROM; 8.125" (diagonal) 640x240 256-color touchscreen; 74-key touchtypeable QWERTY keyboard; built-in 56 K modem; Type II PC Cars slot; CompactFlash slot; VGA-out port; parallel port; serial port; IrDA infrared port; lithium-ion rechargeable battery pack (12 hrs use per charge); AC adapter; PC Card adapter, backup battery, synchroniza-

tion cable; quick start and users guides.
SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by LG includes: bFAX Pro, vVIEW, Pocket Finance, Mail on the Run, E-mail attachment viewer, Internet e-mail setup wizard, Database backup/restore utility, Citrix ICA Thin Client software.
ACCESSORIES: Lithium-ion rechargeable battery pack, AC power adapter, connectivity cable.

LG Phenom Ultra — $899
HARDWARE: 100MHz Hitachi SH3 CPU; 32MB RAM; 640X240-pizel backlit 256-color VGA display (81/8" diagonal screen); new metallic design, internal 56 KBPS modem; "large" QWERTY keyboard; standard VGA-out port; standard paralle port; serial port; IrDA infrared port, Type II PC Card slot; CompactFlash capability with converter card; voice memo capability; rechargeable Lithium-ion battery pack (12 hours of battery life, according to LGE).
SOFTWARE: Microsoft Windows CE 2.0 operating system (User-Upgradeable to Windows CE Handheld PC Pro Edition) accessories and "Pocket" application. Software on disk or VDROM: Windows CE Services, third-party software bfaxPRO, Pocket Finance, Email set-up Wizard, Email FileViewing, Database backup/restore, Mail on the Run! Limited
ACESSOROES: All accessories are included.

LG Phenom —$399
HARDWARE: 80 MHz SuperH RISC-Hitachi CPU; 8 MB RAM; 640x240-pixel backlit monochrome display; internal fax/modem; QWERTY keyboard; VGA out port with cable; serial port; IrDA infrared port; Type II PC Card slot; Compact Flash slot; voice memo capability; rechargeable battery pack; docking station; power adapter; user guides; CD ROM with third party software applications.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications. Software on disk or CDROM: not announced.
ACCESSORIES: LG Windows CE 2.0 upgrade.

NEC

CONTACT your local NEC dealer or NEC; Phone: (USA) 888-8-NEC-NOW. Web: www.nec-computers.com

NEC MobilePro 800 H/PC Pro– $1,000
HARDWARE: NEC VR4121 CPU; 32MB RAM (expandable to 48MB), 24MB upgradeable ROM; 9.4" (diagonal) 800x600 65K color touchscreen; 78-key touch typeable QWERTY keyboard; built-in 56K modem; Type II PC Card slot and Type II CompactFlash slot; serial port, IrDA port and USB port; microphone and speaker; headset jack; AC adapter; VGA-out cable; PC sync cable; RJ-11 modem cable; rechargeable lithium-ion battery pack (8+ hrs per charge); quick start and user guides.
SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by NEC not yet announced.
ACCESSORIES: AC power adapter; PC synchronization cable; lithium-ion battery pack; 32MB RAM memory module; stylus pen pack; carrying case; docking cradle.

NEC MobilePro 770 H/PC Pro – $800
HARDWARE: NEC VR4121 CPU; 32MB RAM (expandable to 48MB), 24MB upgradeable ROM; 8.1" (diagonal) 640x240 65K color touchscreen; 78-key touch typeable QWERTY keyboard; built-in 56K modem; Type II PC Card slot and Type II CompactFlash slot; serial port, and IrDA port; microphone and speaker; headset jack; AC adapter; VGA-out cable; PC sync cable; RJ-11 modem cable; rechargeable lithium-ion battery pack; quick start and user guides.
SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by NEC not yet announced.
ACCESSORIES: AC power adapter; PC synchronization cable; lithium-ion battery pack; 32MB RAM memory module; stylus pen pack; carrying case; docking cradle.

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NEC MobilePro 750C— $799

HARDWARE: 80 MHz NEC Vr4111 MIPS CPU; 16 MB RAM; 16 MB ROM; 640x480 backlit touch screen; 256 color LCD; large touch typeable keyboard; built-in 33.6 low-power hardware modem; VGA Port for presentations; Type II PC Card slot; one CompactFlash slot; serial and IrDA ports; built-in microphone and speaker; QuickKeys program to launch applications; AC adapter; PC connectivity cable; RJ-11 modem cable; Lithium Ion rechargeable battery, Instant on and 8-hour battery life.

SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and Pocket Outlook, Pocket Contacts, Pocket Calendar, Pocket Tasks, Pocket Word, Pocket Excel, and Pocket Powerpoint. Software on disk or CD ROM: IntelliSync; pcANYWHERE CE; Virtual Courier; QuickNotes; bFAX; bPRINT; Jetforms E-Forms to go.

ACCESSORIES: 32 MB Memory Upgrade: 16MB CompactFlash(tm) Card; Docking Cradle; Serial Cable; VGA Cable; Rechargeable Battery Pack; (additional battery pack included); AC Adapter, Stylus Pak; Carrying Case.

NOVATEL WIRELESS

CONTACT Novatel Wireless; Phone (USA): 888-888-9231; Web: www.novatelwireless.com; Sales Contact: Pinacore: 1-800-PINACOR or Mobile Planet: 800-MPLANET or online at www. mplanet.com.

Novatel Wireless CONTACT — $999.95

HARDWARE: 80 MHz Hitachi SH3 RISC CPU; 8 MB of RAM (expandable to 32 MB); 640x240 backlit gray-scale touch screen; built-in 19.2 kbps wireless modem (uses existing U.S. cellular telephone networks); a 14.4 kbps wireline modem; serial/VGA port; type II PC card slot; IrDA infrared port; built-in speaker and microphone; rechargeable Lithium Ion battery, AC adapter.

SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications.

ACCESSORIES: All items included with unit can be purchased as accessories. In addition, the following are available: Serial/VGA cable; Leather Case; DC Car power adapter.

NTS COMPUTER SYSTEMS

Contact: NTS Computer Systems; Phone: 604-465-1040; Fax: 604-465-3323; Web: http://nts.dreamwriter.com/

Dreamwriter I.T. — $varies

Dreamwriter IT is designed as a computer for students and sold to educational organizations in quantity. It is not marketed as an end-user product, although they do sell single units.

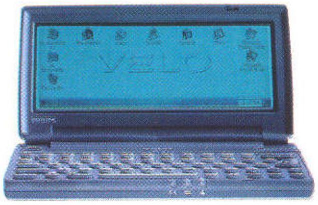
HARDWARE: 80 MHz Hitachi MIPS CPU; 16 MB RAM, 16 MB ROM (upgradeable to 64 RAM, 128 ROM); 640x480 256 color backlit (non-touchscreen) display; touchpad mouse device; 64-key touchtype keyboard; 3.5" (1.44 MB) floppy drive; internal 33.6 Kbps modem; external standard VGA display connector; 10 Base-T LAN connector; two Type II PC Card slots; IrDA 1.1 infrared port; serial and parallel ports; connectivity cable; rechargeable NiMH battery pack (8 hrs use); AC adapter; quick start guide and instruction manual. Case optional.

SOFTWARE: Microsoft Windows CE 2.11 operating system and standard H/PC Pro "Pocket" applications and utilities.

ACCESSORIES: Protective Sleeve, Carry Home Case, 128K or 512K PC Memory Card, connectivity cable for PCs and Macs; AC adapter.

PHILIPS

CONTACT Philips Mobile Computing Group; Phone (USA): 888-FOR-VELO; 408-558-2200; Fax: 408-558-2222; Web: www.velo1.com. U.S. retail outlets include: CDW, CompUSA Direct; Mobile Planet, PC Connect, and PC Zone.



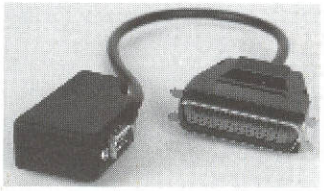
Philips Velo 500 with 16 MB RAM — $699

Philips Velo 500 with 24 MB RAM — $799

HARDWARE: 75 MHz MIPS processor; 16 MB or 24 MB of internal RAM (expandable to 40 MB or 48 MB with an optional 32 MB DRAM Miniature Card); built-in low power 28.8 Kbps modem with 9600 Kbps fax; DRAM Miniature Card slot; Flash/ROM Miniature Card slot; 16 level grayscale monochrome screen capable of 480x240 or 640x240 pixel display; Velo Voice Memo system; built-in phone jack; phone cord; rechargeable NiMH battery pack; and docking station, connectivity cable, 9-to-25-pin adapter, AC Adapter.

SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories and "Pocket" applications. Software on disk or CDROM: not announced.

ACCESSORIES: Velo 1 upgrade to Windows CE 2.0; 2 MB DRAM Card; 4 MB DRAM Card; 2 MB Flash Miniature Card; 4 MB Flash Miniature Card; Velo Docking Station; Velo Type II PC Card V-Module; Velo-to-PC Serial Cable; NiMH Rechargeable Battery Pack; Traveling AC Adapter; Carrying Case.



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SAMSUNG

Contact: Samsung www.egonote.com .

eGO note H/PC Pro – $850 (est.)

HARDWARE: MIPS Toshiba TX 3922 148 MHz CPU; 16MB RAM (expandable to 48MB); 16 MB upgradeable ROM; 8.2" (diagonal), 640x480 256-color backlit screen; mouse touchpad (no touchscreen); 65-key touch typeable QWERTY keyboard; built-in 56K modem; Type II PC Card slot and CompactFlash slot; fast IrDA port, VGA out and USB ports; serial port; RJ-11 jack for modem; docking cradle adds PS/2 Keyboard port, a PS/2 Mouse port, and a standard parallel port; eGO note includes a built-in microphone and speaker, external jacks for each, and independent record/play/stop buttons; powered by a rechargeable lithium-ion battery pack (10+ hrs per charge) or AA alkaline batteries (3.5+ hrs use); comes with quick start and user guides.

SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by Samsung not yet announced.

ACCESSORIES: Unannounced, but will probably include an AC power adapter; lithium-ion battery pack; docking cradle.

SHARP

CONTACT your local Sharp dealer or Sharp Electronics Corporation; Phone (USA): 800-BE-SHARP; Web: www.sharp-usa.com

Mobilon TriPad PV-6000 H/PC Pro – $999

HARDWARE: NEC Vr4111 90 MHz CPU; 16 MB RAM (upgradeable to 32 MB), 16 MB ROM; 9.4" 640x480 256 color touchscreen; 64-key touch typeable QWERTY keyboard; built-in 33.6K modem; Type II PC Card slot and Type II CompactFlash slot; serial port, IrDA port; microphone and speaker; AC adapter; mini-docking station with connectivity cable; RJ-11 modem cable; rechargeable lithium-ion battery pack (12-16 hrs per full charge); quick start and user guides.

SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by Sharp includes PC File Viewer, Image Editor, bFax Pro, bUSEFULBackup utility, Citrix ICA Client, VB/MFC Runtime, Proxim Driver for Wireless LAN PC Card, Trial Version of H/W recognition software.

ACCESSORIES: Unannounced, but will probably include an AC power adapter; synchronization cable; lithium-ion battery pack; stylus pen pack; carrying case; docking cradle.

Mobilon Pro PV 5000 H/PC Pro – $899

HARDWARE: Toshiba TX 3922 129 MHz; 16 MB RAM; 16 MB ROM; 9.4" 640x240 256 color touchscreen; 69-key touch typeable QWERTY keyboard; built-in 33.6K modem; Type II PC Card slot; serial port, IrDA port; AC adapter; mini-docking station with connectivity cable; RJ-11 modem cable; rechargeable lithium-ion battery pack (8 hrs per full charge); quick start and user guides.

SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by Sharp includes PC File Viewer, Image Editor, bFax Pro, bUSEFULBackup utility, Citrix ICA Client, VB/MFC Runtime, Proxim Driver for Wireless LAN PC Card, Trial Version of H/W recognition software.

ACCESSORIES: Unannounced, but will probably include an AC power adapter; synchronization cable; lithium-ion battery pack; stylus pen pack; carrying case; docking cradle, digital camera card.

Sharp Mobilon HC-4600 — $899

(256 color display, 16 MB RAM, upgradeable to 32 MB)

Sharp Mobilon HC-4500 - $799

(256 color display, 16MB RAM)

Sharp Mobilon HC-4100 - $699

(16-grayscale display, 12MB RAM)

HARDWARE The following elements are common to all Mobilon Handheld PCs: MIPS CPU; built-in 33.6Kbps data/9.6Kbps power-efficient modem; Type II PC Card slot; serial port; IrDA infrared port; 64-key keyboard, including seven "one-touch" application keys; LED indicators (Calendar and Task reminders, World Clock daily alarms, when it's time to charge the batteries, when your modem is connected, and when you are recording a voice memo); built-in microphone and speaker (to record and play voice memos); external record button; CR2032 Lithium backup battery; PC Link serial cable; RJ-11 modular phone cable; and Stylus.

HC-4500 and HC-4600 include:

SOFTWARE: Microsoft Windows CE 2.0 operating system and Accessories Microsoft Pocket Applications. Software on CD ROM or available at Web Site

HC-4100 and 4500: bFAX Express; Voice Recorder; Image Editor; Sharp Zaurus Data Transfer; Microsoft Windows CE Services; IntelliMigrate; Microsoft Schedule+ 7.0a,

In addition to the above software, the HC-4600 comes with PC File Viewer, Citrix ICA Client, bFax Pro, PhotoLink, a newer version of Image Editor, and MPEG Player.

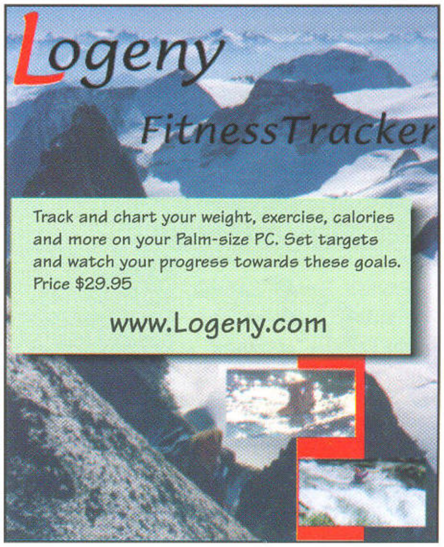
ACCESSORIES: Docking Station Kit (includes Docking Station, NiMH Rechargeable Battery Pack, AC adapter); NiMH Rechargeable Battery Pack; Digital Camera Card; AC Adapter.

VADEM

CONTACT: Vadem; Phone (U.S.): 408-467-2100; E-mail:info@vadem.com; Web: www.vadem.com/home.html.

Clio H/PC Pro – $999

HARDWARE: NEC Vr4111 90 MHz CPU; 16 MB RAM (upgradeable to 32 MB), 16 MB ROM; 9.4" 640x480 256 color touchscreen; 64-key touch typeable QWERTY keyboard; built-in 33.6K modem; Type II PC Card slot and Type II CompactFlash slot; serial port, IrDA port; microphone and speaker; AC adapter;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www.Logeny.com

mini-docking station with connectivity cable; RJ-11 modem cable; rechargeable lithium-ion battery pack (12-16 hrs per full charge); quick start and user guides.
SOFTWARE: Windows CE 2.11 operating system; H/PC Pro applications and accessories including Pocket Outlook (Inbox, Calendar, Tasks, Contacts), Pocket Word, Pocket Excel, Pocket PowerPoint, Pocket Access, Inkwriter, World Clock, various set-up and communications utilities, Windows CE Services 2.2 (on CD ROM). Additional software provided by Vadem includes the ViewFinder personal information viewer and finder, the ParaGraph CalliGrapher handwriting recognition program, and the bFAX Pro fax send/receive program.
ACCESSORIES: Unannounced, but will probably include an AC power adapter; synchronization cable; lithium-ion battery pack; stylus pen pack; carrying case; docking cradle.

Palm-size PC

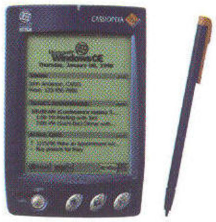
BCOM

CONTACT: Bcom Electronics Inc.; Web: www.bcom.com.tw/.

MARS Palm-size PC (4MB) – $379; (8MB) – $499
HARDWARE: 75MHz MIPS PR3910 CPU; 4MB or 8MB RAM, 8MB or 16MB ROM; 320x240 backlit monochrome touch screen; built-in 28.8K software modem; serial port; Type I CompactFlash slot; built-in microphone and speaker; AC adapter; batteries; docking cradle and cable; carrying case; manuals.
SOFTWARE: Microsoft Windows CE 2.0 operating system, utilities, and standard Palm-size PC applications, including Inbox, Calendar, Tasks, Contacts, Mobile Channels, and Notetaker. Windows CE Services. No CD ROM with additional software is available at this time.
ACCESSORIES: The docking cradle, AC adapter, cable and carrying case will be available as accessories.

CASIO

CONTACT your local Casio dealer or Casio, Inc.; Phone (USA): 888-204-7765 or 973-361-5400; Web: www.casio.com/hpc/e-10.cfm



Cassiopeia E-10 Palm-size PC — $399

HARDWARE: 100 MHz NEC VR4111 RISC processor; 4MB RAM; 8MB ROM; 320x240 touch-sensitive backlit display; CompactFlash slot; serial port, IrDA port, built-in voice record/playback capability. Weighs 5.5 oz (171 g); size 3.2 x 4.9 x .72 inches (8.13 x 12.45 x 1.83 cm), powered by 2 AAA batteries and a CR2016 backup battery. Comes with connectivity cradle, carrying case, manuals, and additional software.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CDROM: Microsoft Windows CE Services with ActiveSync.
ACCESSORIES: Connectivity cradle, carrying case, AC adapter, modem adapter; CompactFlash storage card.

EVEREX

CONTACT Everex Systems; Phone (USA): 888-PALMPC-4; Web: www.everex.com

Freestyle Associate (4MB RAM) – $269
Freestyle Manager (8MB) – $329; (16MB) – $399
Freestyle Executive (8MB) – $449 (16MB) – $499

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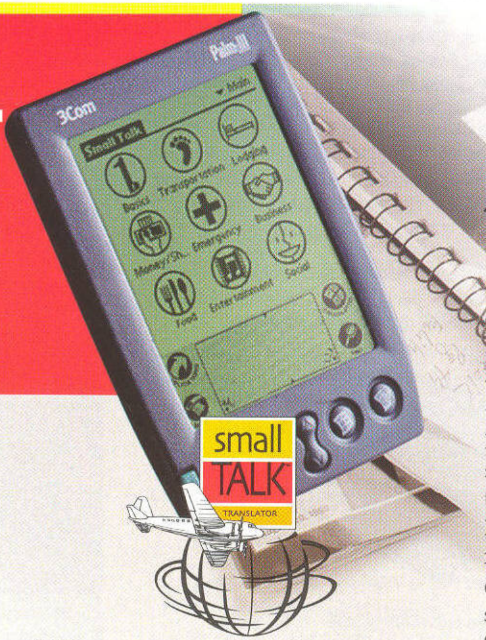

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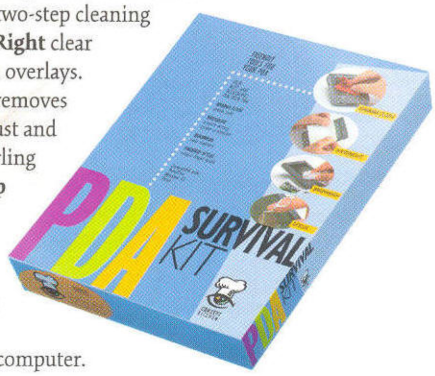


HARDWARE: Manager and Executive have a 66 MHz NEC VR 4111 CPU; Associate has a 54 MHz NEC VR4102 CPU; Both the Manager and Executive are available with either 8 MB or 16 MB of RAM; both have 8 MB of ROM; Associate has 4 MB RAM and 8 MB ROM. All units have a 320x240 backlit touchscreen; CompactFlash slot; serial and IrDA ports; and built-in voice record/playback capability. Weighs 5.29 oz (150g); size 4.8x3.18x0.64 inches (12.2x8.1x1.7 cm); Powered for up to 20 hours by 2 rechargeable NiMH AAA batteries; CR2032 backup battery (batteries included). Comes with connectivity cable, AC adapter, manuals and additional software. The Manager comes with a foldable MobileCradle for data sync. The Executive comes with a MobileCradle with a built-in 33.6 Kbps fax/modem.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CDROM: Microsoft Windows CE Services with ActiveSync; bFAX Express, bTRACK, smARTwriter & smARTcommand, JOT.
ACCESSORIES: Docking station with integrated 33.6k modem; NiMH rechargeable battery; wireless paging card.

LG ELECTRONICS

CONTACT local LG dealer or LG Electronics Customer Information Center; Phone (USA): 800-243-0000; Web: www.lge.co.kr

LGE Pocket Phenom - $TBA (not yet shipping)

HARDWARE: SH3 processor; 320x240 touch-sensitive backlit display; CompactFlash slot; serial port, IrDA port, built-in voice record/playback capability. Powered by 2 AAA batteries, backup battery. Weight, size, and other details not yet available.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CD ROM: Microsoft Window CE Services with ActiveSync.
ACCESSORIES: Information not yet available.

PALMAX

CONTACT Palmax; Phone (in Taiwan): +886-2-2266007; Email: palmax@palmax.com.tw; Web: www.palmax.com.tw

Powered by Windows CE

Palmax PD-300 Palm-size PC — $299 (not yet shipping)

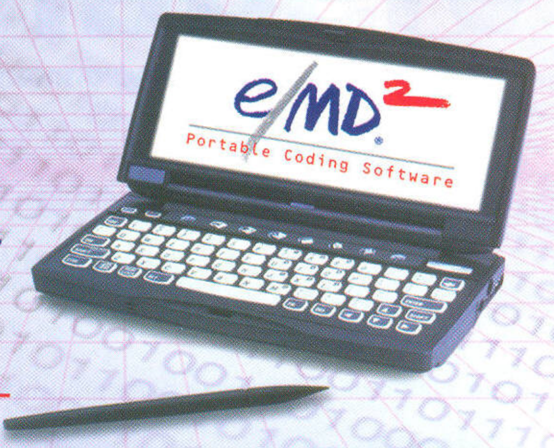
HARDWARE: 60 MHz SH3 processor; 2 MB RAM (expandable to 4 or 10 MB); 8MB ROM; 320x240 touch-sensitive backlit display; CompactFlash slot; serial port, IrDA port, built-in voice record/playback capability. Weighs 6.5 oz (184 g) size 4.9 x 3.2 x .8 inches (12.45 x 8.13 x 2.03 cm), powered by 2 AAA batteries and a CR1220 backup battery. Comes with connectivity cradle, AC adapter, manuals, and additional software.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CDROM: Microsoft Windows CE Services with ActiveSync
ACCESSORIES: NiMH rechargeable battery pack.

PHILIPS ELECTRONICS

CONTACT Philips Mobile Computing Group; Phone (USA): 888-367-8356 or 408-558-2200; Fax: 408-558-2222; Web: www.mobile.philips.com

Philips Nino 301 and 302 Palm-size PC — $399.99/$499.99

HARDWARE: 75 MHz MIPS R3900 processor; 4MB or 8MB RAM; 8MB ROM; 320x240 touch-sensitive backlit display with control dial; built-in low power 22.8 Kbps modem; CompactFlash slot; serial port, IrDA port, built-in voice record/playback capability. Weighs 7.33 oz (227 g); size 3.41 x 5.25 x .8 inches (8.66 x 13.34 x 2.03 cm). Four quick start buttons launch the most commonly used applications. The 301 is powered by 2 AA batteries and a CR2025 backup battery and comes with NinoDock connectivity cradle, carrying case, manuals, and additional software. In addition to the above, the Nino 302 also comes with a NiMH rechargeable battery. Either model can use the battery pack or AA batteries.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and "Pocket" applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CDROM: Microsoft Windows CE Services with ActiveSync; T9 — a utility that facilitates data entry by predicting words and character strings you enter; smARTwriter handwriting recognition software, and voice command recognition software. The package will also come with Nino-specific applications, which will be announced later.
ACCESSORIES: Modem, CompactFlash Cards, NiMB rechargeable battery pack.



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Samsung Palm-size PC — $TBA (not yet shipping)

HARDWARE: 75MHz
MIPS processor; 2MB RAM (expandable to 8 MB) and 4 MB ROM (expandable to 8 MB); 240x340 touch-sensitive backlit display; built-in 28.8 modem; CompactFlash slot; serial port; IrDA port; built-in voice record/playback capability. Weighs 3.88 oz (110 g) (plus weight of batteries); size: 3.35 x 5.12 x .78 inches (8.51 x 13 x 1.98 cm); powered by 2 AA batteries; backup battery. Comes with Connectivity cradle, AC adapter, user manuals.
SOFTWARE: Microsoft Windows CE 2.0 operating system, accessories, and Pocket applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CDROM: Microsoft Windows CE Services with ActiveSync.
ACCESSORIES: No information at this time.

UNIDEN

CONTACT Uniden; Phone (USA): 888-6-UNIDEN; Web: www.uniden.com

Unipro PC100 Palm-size PC - $379

HARDWARE: 75 Mhz CPU; 4MB RAM (expandable to 8MB) and 8MB ROM; 240x320 touch-sensitive, 4 level grayscale screen with back lighting; 28.8kbps internal modem with RJ-11 connector; Type II CompactFlash slot; built-in voice recorder; serial port, IrDA port. Powered by 2 AA batteries.
SOFTWARE: Microsoft Windows CE 2.0 operating system with Palm-size PC applications, including Pocket Outlook, Inbox, Mobile Channels and Notetaker. Software on disk or CD ROM includes Microsoft Windows CE Services with ActiveSync which automatically syncs Palm-size PC and desktop Outlook data and other files while in the docking station.
ACCESSORIES: Comes standard with docking cradle, AC/DC adapter, stylus pen with storage, and CD-ROM containing Microsoft synchronization software.

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CLARION

CONTACT your Clarion dealer or Clarion Sales Corporation; Phone (USA): 310-327-1999; Fax: 310-327-1999; Web: www.autopc.com or www.clarion multimedia.com

Clarion Auto PC — $1,299 (not yet shipping)

HARDWARE: 60 MHz Hitachi SH3 processor; 8 MB RAM; 8 MB ROM; 8-color, 256 x 64 pixel active magrix LCDdisplay with detachable face plate; microphone; CompactFlash slot; IrDA infrared port; serial port; 1-DIN form factor fits in standard dashboard slot; AM/FM stereo tuner; 35 watt x 4 channel; 4 pre-amp outputs; CD/CD-ROM player; Digital Sound Processor (DSP); Universal Serial Bus (USB).
SOFTWARE: Windows CE 2.0 operating system with voice-activiate control; voice memo, address book, highway navigation, vehicle mileage log, text-to-speech messages.
ACCESSORIES: CompactFlash memory card; InfoGation AutoPCfile manager; Clarion GPS receiver; map data for Global Positioning System; Clarion USB 6 CD/CD-ROM auto changer; UNGOUSBvehicle security system; cellular telephone/modem USB interface, FM side-band wireless receiver &services, ASSIST services, vehicle diagnostic/monitoring interface.

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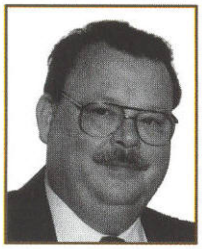


Andrew Seybold

WirelessKnowledge

Microsoft and Qualcomm recently made a major announcement that will have a profound effect on wireless data communications. WirelessKnowledge, the joint venture funded by Qualcomm and Microsoft, is a radically new concept that is difficult to explain in a way that non-technical folks can truly understand and appreciate. Some within the industry saw this announcement as being an endorsement of a wireless technology developed by Qualcomm (CDMA) that is used by PCS wireless providers. But the real reason WirelessKnowledge is important is because it bridges the gap between the wireless networks and a corporation's information resources.

The best way to understand WirelessKnowledge is to step back and look at why wireless data users today number only in the hundreds of thousands and not in the millions.

Wireless voice is easy

Buying and using a wireless voice phone (cell phone) is easy. All you have to decide is which phone and network you want to use. Once a wireless phone has been activated, you simply dial a number and talk to the person who answers on the other end. It doesn't matter whether that person is using a wired phone or a phone on a wireless network. Every phone – wired or wireless – has a phone number, and every phone in the world can be dialed from any other phone.

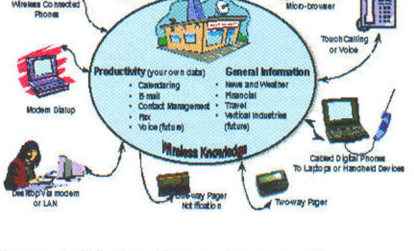
Wireless data is far more complex. Not only do you have to choose the type of device (wireless modem, voice-and-data phone, two-way pager, etc.) and the network you want to use, you must also figure out how to connect to the information resources that you need. Most of us want to be able to access the e-mail, calendar, address book, and data files that are stored on our corporate network, as easily as we access voice mail stored on our wired phone system.

Unfortunately, connecting to our information resources is far more complex than merely dialing a number. The corporate IT manager is charged with making sure that all of the corporate data is available, but in a secure manner so that unauthorized people cannot gain access. So, unlike phone systems, which are open to anyone with a phone, corporate computing resources are closed to the outside world.

If the corporate network is connected to the Internet, there is a "firewall" between the network and the Net to keep out unauthorized access. Users may be permitted to dial into the network via a wired phone but, even here, security is as high. For years, the only way to connect the corporate information resources to a wireless network has been through a direct hard-wired connection between the corporate LAN and the wireless network.

WirelessKnowledge

WirelessKnowledge offers a way to connect a private LAN to a remote network operations center outside the firewall. Services will be made available first to IT mangers and then to SOHO and individual users. The connection can be by a direct wired link by tying a corporate intranet to the operations center, or even by making use of a Virtual Private Network (VPN) with a secure Internet link between WirelessKnowledge and the corporate LAN.



Screen 1: WirelessKnowledge Network "Operations Center" provides a central link between the corporate network and a variety of mobile devices.

Why is this different from connecting

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Windows CE v 2.11 Enhancements

Because Windows CE devices are designed to be PC Companions rather than standalone computers, their communications capabilities are crucial. Version 2.11 of Microsoft's Windows CE operating system features several enhancements in the key area of communications.

The new Handheld PC Professional devices are based on version 2.11 of the Windows CE operating system. Based on the ones I've seen, they are more like traditional notebook computers than handhelds, in terms of their large color screens and 80% to standard size keyboards. Most H/PC Pros are "communications-ready" and include a built-in wired modem, a PC Card slot, and CompactFlash slot.

Windows CE version 2.11 adds support for IMAP4 e-mail in addition to POP3 access. New also is support for Outlook off-line folders, which becomes available on the Windows CE device once it is synchronized with the desktop PC Outlook folders. E-mail and other information can be stored on the handheld or desktop. The Pocket Internet Explorer has also been enhanced to provide support for HTML 3.2, Jscript, and 128-bit encryption.

In the area of applications, the most important additions include Pocket Access and ActiveX data objects, as well as updated versions of Pocket Word, Excel, and PowerPoint. (Pocket PowerPoint is a viewer-only application. PowerPoint files downloaded from a desktop are converted to GIF format and can be shown on Windows CE machines.) Since most of the new H/PC Pro devices include VGA or SVGA output, they can now be used to project PowerPoint presentations.

Microsoft Word, Excel, PowerPoint, and Access files can now be received directly on the Windows CE device and converted to Pocket format. Prior to v.2.11, such documents had to be converted on the desktop before they could be moved to the Windows CE device.

Having the ability to convert files on the Windows CE device means that you can now receive e-mail attachments and open them in the Pocket applications, make changes, and then send them back to the originator as standard Microsoft application files. Further, if you create a document in Pocket Word, for example, you can save it as a Desktop Word file and send it via e-mail to someone who does not have a Windows CE device.

Finally, Microsoft added support for network, parallel port, and FastIR printing, as well as Ethernet drivers (Socket and Proxim) and USB host support.

In combination, these enhancements render this new breed of Windows CE devices more communications friendly. Microsoft is committed to strong communications between companion devices and desktops, notebooks, and network servers. Therefore, it is safe to assume that we will be seeing additional communications support for both wired and wireless connections over time.

directly to a wireless network?

- The connection between the network operations center and the corporation will be secure.
- The network operations center will be connected to a number of different networks, not to a single network.
- These networks will support different types of data access depending upon the type of network and the device being used.
- WirelessKnowledge will be the bridge between the corporation and many different networks.
- As technology improves and new networks come online, IT managers will have the ability to change to the new network(s) without having to change anything within their corporation.
- WirelessKnowledge will not be simply a network operations center, it will provide help-desk support to corporate users when they are away from the office, thus off-loading support for the wireless connection from the IT manager.
- Corporate users will have access back to their own information via the network operations center and the secure connection to their corporate assets. They will also have access to information on the Internet if desired.

WirelessKnowledge — a big deal

WirelessKnowledge bridges the gap between the wireless networks and a corporation's information resources. It is the missing link between mobile workers and their own information. And it provides a secure connection between the corporation and the outside world (see screen 1).

It is a big deal because it enables mobile workers to wirelessly access their own corporate assets. At first, the service will provide access to Microsoft Exchange Server-based networks, but this will be expanded to include access to Lotus Notes, cc:Mail, and other back-end information services. This is

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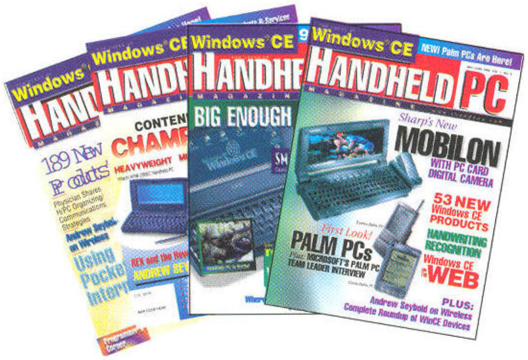
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an important point to understand: WirelessKnowledge will be network agnostic, operating system agnostic, and device agnostic.

The system will provide access to a user's own data in a format optimized for the type of device and the type of network he or she is using. This is a big plus for corporations with a mobile workforce employing a variety of devices such as wireless phones, handheld PCs, Windows CE devices, one-way and two-way pagers, notebook computers, etc.

Consider some examples

• A mobile fleet: A company has a fleet of mobile workers on the road who use notebook computers. Some have wireless phones, and others have one-way or two-way pagers. Still others may carry a Palm-size PC or other PC Companion, while some carry several different devices. By connecting the corporate LAN to WirelessKnowledge, each and every user with any number of different devices will have wireless access directly back to his or her own information resources.

• A single user with multiple devices: Consider also typical mobile workers today. They may have a wireless phone, a PC Companion or other PDA, a pager, and a notebook computer. At different times, they may carry all or only one of these devices. Today each device's ability to access information resources varies. Using the WirelessKnowledge system, any of these devices can have access to the same information. For example, e-mail headers can be "pushed" out to a pager. The user can then dial into the system with a wireless phone and download the e-mail to a PC Companion or notebook computer. The e-mail notification can be sent to a phone that is capable of short messaging services, or the entire e-mail can be sent to a two-way pager or PC Companion equipped with a wireless modem.

Access to a user's calendar, phone book, e-mail, and other data can be provided no matter what device is in use and, in most cases, regardless of the type of wireless data network employed. Users do not need to become communications experts, and IT managers can outsource their wireless data services knowing that their connection is secure.

Network operators already on board

WirelessKnowledge has already signed up a number of network operators, including AT&T Wireless, Bell Atlantic Nynex, Sprint PCS, Leap Wireless International, GTE Wireless, BellSouth (BellSouth Wireless Data Network, PCS and Cellular services), Bell Mobility, AirTouch Cellular, and US West Wireless. We expect to see many more carriers onboard in the near future, including GSM carriers as well as one- and two-way paging companies.

WirelessKnowledge is the first company to step up and address the problem of connecting the corporate back-end to a multiplicity of wireless networks and providing information to a wide variety of devices. The service will be in beta test starting in early January and is scheduled to go into full service in the mid-year time frame. Features and functions will be added and enhanced as time goes by.

For now, WirelessKnowledge is one of the most important developments in the world of wireless data. ■

IMAP Force is an IMAP4 e-mail client for Windows CE, designed to let mobile users quickly browse through important messages, without having to download either the entire message or the large attachment(s). IMAP Force also allows the user to send mail messages (compose, reply and forward) using SMTP.

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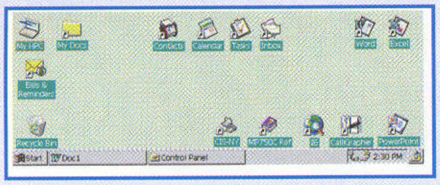
Quick Tips
& PC Companion Tricks

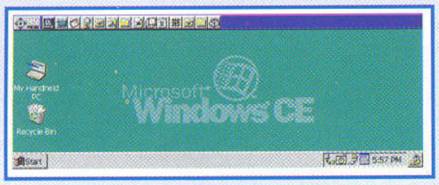
Thanks go to all the people who have written tips for, and shared their knowledge of the Handheld PC, Palm-size PC and Windows CE. This includes the folks at Microsoft, manufacturers of the H/PCs, and members of online forums supporting users of the PC Companions. Based in part on these sources, all tips are written by Rich Hall (unless otherwise specified). Special thanks to Jim Christian, Sysop on CompuServe's WinCE Peripherals Forum, for help on the first tip and for contributing two additional tips.

Clean up desktop and arrange desktop icons

We've published tips about keeping the H/PC desktop uncluttered by deleting the icons of programs and folders you don't use regularly. If an application like Pocket Excel or Word can be launched by a hardware button on your H/PC, then you don't need an icon on the desktop. Taking the icon off the desktop may speed up screen refresh. Shortening the icon names on the Desktop names may also speed up screen refresh.



Screen 1: Group icons on your desktop in a meaningful way to make it easier and quicker to find applications and folders.



Screen 2: CeAppBar adds a button bar (see top of screen) that lets you launch any application with a single tap. You can add applications to the button bar and remove their icons from your desktop.

You should organize what's left in some meaningful way. For example, you could put the icons of your most used applications and folders on the left side of the screen, and the others on the right. This would make it easier and quicker to launch

Or you could group the applications by type (i.e. Pocket Word, Excel, and PowerPoint in the upper right of the screen, the Pocket Outlook applications in the top center, etc.). I use a combination of those two methods (see Screen 1). There's even a third-party application called CeAppBar (www.queenimage.com/) that adds an application-launch button bar to your H/PC (see Screen 2). The point is, clean things up and organize the desktop icons in a way that is meaningful to you.

"Patch" fixes Palm-size PC Find function

Some Palm-size PC users have reported a problem with the Find function on their devices. The problem occurs only on some devices and is limited to scenarios where Find is used to search through Contacts data. However, when the problem does occur, the device usually "hangs," requiring users to reboot to resume normal operation. Microsoft has found that under certain circumstances, importing data into Outlook on the desktop computer can cause the data to become stored in an incompatible format. Once this data has been synchronized to the Palm-size PC, it causes the Find function to fail. The data is never corrupted or lost; it is simply stored in an incompatible way.

If you experience this problem, correct it by downloading the Microsoft Patch and installing it on your Palm-size PC. Look for the "Palm-size PC Find Patch" at www.microsoft.com/windowsce/downloads/pccompanions/default.asp

Tom Gibson
Technical Editor – H/PC Magazine
E-mail: Gibson@thaddeus.com

Newton Keyboard on HP 660LX palmtop PC

The small Newton keyboard works near flawlessly with my HP 660LX H/PC. You need to find a keyboard somewhere (try any of the Newton newsgroups). It will cost you around $50. A cable can be purchased from PDA Concepts for around $20 (Web: www.pda-concepts.com, phone: 801-965-9141). Finally, you'll need to download a free driver from www.tt.rim. Some points:

- The Newton keyboard is near-full-size and you'll be able to type fast on it.
- This arrangement will probably take a little more battery current to power.
- You'll have to touch the H/PC screen every 5 minutes or so, so to keep the H/PC active, as the screen does not detect the keyboard activity.
- Everything fits in a mini-briefcase and weights around 2 lbs.

- I've set things up to install the small driver software from a Utilities folder I have off of the Start>Program menu.

This will work on most HPCs, and I've received reports that it also works with Palm-size PCs. A full-size keyboard for around $70. Not bad!

Jim Christian
Sysop on CompuServe's WinCE Peripherals Forum
E-mail: 74777.2604@compuserve.com

Enter Contacts and Appointments ASAP!

This advice goes for any PDA or desktop personal information organizer. Now is almost always the best time to enter an appointment or contact information. Maybe you have to wait until you get back to the office. Fine! But do it then. The longer you put it off, the less likely it will happen. As soon as you enter the contact information, throw away the note or business card (or write "entered" on the card and file it away somewhere). Then, immediately, synchronize your PC Companion with your desktop PC so you have a backup copy of your contact information. Finally, if it is even remotely possible that you'll need information again, save it on your PC Companion. For example, the last time I was at the Des Moines airport, I got the phone number of the local American Airlines desk. I don't fly frequently, but when I do, it's out of Des Moines (over two hours from where I live). I always call the local desk and ask them what the weather is like in Des Moines before I leave for the airport.

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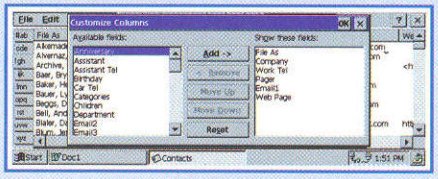
Keep spares on hand

If you frequently travel on multi-day business trips, you should buy a spare A/C adapter/recharger and, maybe, a spare synch cable for your notebook PC. Although you can synchronize a notebook PC and a PC Companion using an Infra-red (IrDA) connection, you may find that the placement of the IrDA transceivers of your two systems is more cumbersome than simply plugging in synch cables to the two serial ports. Why travel with both a notebook PC and a PC Companion? You may use a PC Companion during the day for data retrieval and note taking but still need a notebook for heavy typing and number crunching in the evening.

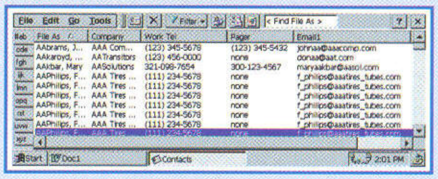
Todd Ogasawara, Computing Central Forum Manager
Windows CE Forum:
http://computingcentral.com/forums/windowsce/

Adjust Contact's main screen to save time

Contacts displays two views: the main view that lists all your contacts, and the individual contact view, that shows you a "card" for each individual. To save time, adjust the main view so it displays as much important information as possible. Then you don't have to go looking through the card views for information. Here are a couple of Hints to help.



Screen 3: Select the "Customize Columns" option from Contacts' Tools menu and add important data fields to Contacts' main view.



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AAPhilips, F...	AAA Tires ...	(111) 234-5678	none	f_philips@aaatires_tubes.com
[illegible]	[illegible]	[illegible]	none	[illegible]

Screen 4: Drag columns to the desired position in Contacts' main display and adjust column width until you are displaying the information you need.

1. Customize your columns to display the information that is important to you.

Contacts' main screen, by default, displays the individuals name (File As), Company, Work Telephone and Home Telephone. But what if the person's pager number and e-mail address is more important to you? In Contacts, got to the Tools menu, select Customize Columns and add those to Contacts' main screen view (or whatever piece of information is important to you). If you don't need the Home Telephone displayed, remove it (see Screen 3).

2. Adjust the columns displayed so you can see more information.

Now that you have the data you want on the main screen, adjust the columns so that it displays properly. Go to Contacts' main screen and drag the column headers around until they are in the order you want. Tap and hold down on the edge of a column header and drag to resize the columns to optimize the information displayed (see Screen 4). You can also go to the Tool menus "Options" selection and select another font or change the font size to display more information.

If you do this right, the information you need will be displayed on the main screen and you won't have to spend time opening cards and tabs.

Jim Christian
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Switching between documents in Pocket Word and Pocket Excel

One of the things that drives me up the wall about the desktop PC version of Word is that you can't easily switch between documents. It's easier on the H/PC. With two or more documents open in Pocket Word (or Pocket Excel), simply hold down the Ctrl key and press the period key or the comma key. This takes you forward or backward through the open documents. You can also tap the document name in the task bar at the bottom of the screen, but this way is faster. Note that this feature works with Pocket Word and Excel only.

PC COMPANIONS
ONLINE

Change is the Name of the Game

By Tom Gibson

Technical Editor, Handheld PC Magazine
Email: tom_gibson@thaddeus.com Web site: www.thaddeus.com

The only thing that never changes about the Internet is the fact that everything is always changing.

The Internet comes as close to a living being as any man-made thing I have ever encountered. The Internet is one, big living family, made up of many smaller individuals (Websites) that are always being born, growing and changing, moving around, and sometimes dying. Here are some notable changes.

Handheld PC Magazine OnLine moves (www.hpcmag.com)

Many sites have moved since I started reporting on Windows CE Internet sites a little over a year ago. In fact Handheld PC Magazine OnLine has recently moved to a new location. Not only does our site have a new URL (Universal Resource Locator), but it has a new server. We have moved our site, not our offices, to a server in Florida. We have also moved the site of our sister publication (The HP Palmtop Paper, www. palmtoppaper.com), to the new server. One major reason for the move was that we've chosen to do all of our Web authoring and management in Microsoft Front Page, and the new server can host such sites. Make sure to check out the site and give us feedback on our new look. There will be a lot of new and interesting thing at the site, including our up-to-date Third Party Products pages, selected articles and tips from past issues, Windows CE news, and never-published articles. We'll also have links to other Windows CE sites, including links to all of the H/PC and Palm-size PC manufacturers sites.

Chris De Herrera's Windows CE Website (www.cewindows.net)

Chris De Herrera's Windows Website has also moved recently. Chris has his own domain name now and has added Mobile Channels capability to his site (see Mobile Channels article, page 26). With Mobile Channels, Web page information is automatically downloaded to your desktop PC on a regular basis. When you synchronize your PC Companion to your desktop PC, the Web content is downloaded for on-the-go viewing. Since Chris' site is constantly changing, this is a good way to keep up with him. There is a lot to keep up with at www.cewindows.net. Chris tells us about all of the different Windows CE-based machines, has a very detailed table comparing the Handheld PCs and another for the Palm-size PCs. Chris also keeps a very detailed FAQ (Frequently Asked Questions) section with answers to just about every PC Companion question you can think of. Chris' site also has Windows CE-related stock quotes and jobs listed.

Protect Your Handheld Investment

The RhinoPak 1000 is now available to Palm-size PC owners. Features include a weather resistant Cordura outer, interior padding, plastic insert screen protector, elastic securing straps, and belt loop. Inside/outside mesh pockets are ideal for pens, business/credit cards, cash, etc. **Black....$26. 95**

The acclaimed **RhinoPak 2000** "sport-ute" case is ideal for all H/PC's with dimensions of 7.25"x4.25"x2". Features include a weather-resistant Cordura outer, padded interior, battery pouches, and pen/stylus holder. Utility pockets inside and out accommodate checkbook/passport, disks, credit/business cards, and car keys. Ideal for the user who needs his/her handheld in the office one day, on the road the next, and in the backcountry on another. **Black....$49.95**

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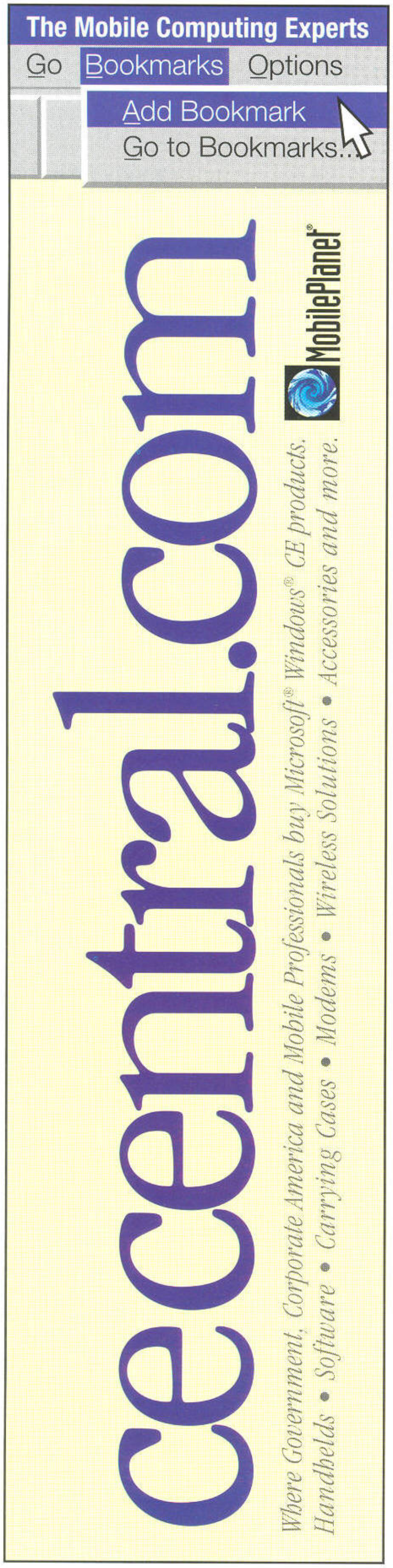
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Microsoft Windows CE Website (www.microsoft.com/windowsce/)

Microsoft has changed their site, adding new sections and moving things around. These changes include:

- The PC Companions Home page (www.microsoft.com/windowsce/pccompanions/default.asp).
- The Auto PC Home page (www.microsoft.com/windowsce/autopc/default.asp.
- Handheld PC Home page (www.microsoft.com/windowsce/pccompanions/hpc.asp)
- Palm-size PC Home page (www.microsoft.com/windowsce/ppc/default.asp)
- Free software downloads Home page (www.microsoft.com/windowsce/downloads/pccompanions/default.asp)
- Windows CE Embedded Systems Home Page (www.microsoft.com/windowsce/embedded/default.asp)

The site's Mobile Professional Magazine has died off, replaced by the following:

- Columns Home page (www.microsoft.com/windowsce/hpc/columns/Default.asp)
- Tips and Tricks Home page (www.microsoft.com/windowsce/hpc/support/tips.asp)

Microsoft's Windows CE section has grown very large, indicating the emphasis Microsoft is putting on Windows CE as an important part of their long-term strategy.

You can't get there anymore

Some Windows CE Websites have gone away completely. Most of these are small sites, put up by individual Windows CE enthusiasts. It's a shame to lose them. User sites add spice to the Internet and value to the Windows CE market place. They are not always the most professional-looking sites, but they are often packed with tips about using a Windows CE device, and sometimes include shareware and freeware programs written by the author of the site. They die because the author lacks time, money, or the energy needed to keep them up. Fortunately, when one of these sites dies, another one seems to spring up to take its place. As we discover them, we'll let you know.

Some new arrivals

There still seems to be a Windows CE Website population explosion. When I'm looking for new sites, I always check out the Windows CE Webring (www.jimmy.com/morency/webring.html). This is one of the top five Webrings at Webring.org. As of November 20, 1998, there were 190 sites listed in the Windows CE Webring.

Derek's Windows CE Sites (http://web.a-znet.com/kder/)

Derek Snyder maintains this new site, with a section for Handheld PCs and one for Palm-size PCs. Derek's is a Mobile Channels site, and has a page of other Mobile Channel sites that you can subscribe to from his site. He also has lot of links to other Windows CE Websites.

Tom's Nino Right Now Website (http://netnow.micron.net/~gilkman/)

Tom Gilkeson's Nino Palm-size PC Website is pretty cool. He has a section that tells you about the applications he currently using on his Philips Nino, lots of news about the Nino and the Palm-size PC, and a bunch of fun stuff like a re-touched picture of John Glenn in space checking his task list on his Nino. In Tom's own words, "OK, so maybe I ate too much Halloween candy and things got out of hand with Photoshop; but a guy can dream, right?"

There are a lot more new sites out there, but I have to leave something to write about next time, so until then, I'll see you OnLine!

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Accurite Technologies	510-666-4900 or 510-666-4905; Web: www.accurite.com	35
ARDIS/American Mobile	800-494-1732 or 847-478-4685; Fax: 847-478-4700; Web: www.ammobile.com	60, IBC
ART, Inc	818-678-3999; Fax: 818-678-3994; E-mail: sales@artcomp.com; Web: www.artcomp.com	2,3
bSQUARE technologies	888-820-4500 or 425-519-5900; Web: www.bsquare.com/hpcm	13
CASIO Soft, Inc.	408-441-2000; Fax: 408-441-4175	BC
Concept Kitchen	415-252-3333; Fax: 415-252-3323; Email: info@conceptkitchen.com; Web: www.conceptkitchen.com	48
Crown Logic	877-252-7001; E-mail: info@crownlogic.com; Web: www.crownlogic.com	56
Everex Systems	888-725-6724; Web: www.freestyle.everex.com	5
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Greenwich Instruments	800-476-4070 or 704-875-8490; Fax: 2801; Web: www.greenwichinst.com	46
Ilium Software	888-632-5388 or 734-973-9388; Fax: 734-973-2640; Web: www.iliumsoft..com	18
Logeny	503-622-4055; Fax: 503-622-4537; Web: www.logeny.com	47
MicroBurst	301-330-2995 or 301-330-8609; E-mail: markf@mburst.com; Web: www.mburst.com	41
MobilePlanet	800-675-2638 or 818-888-7267; Fax: 818-888-3484; Web: www.cecentral.com	58
MVA Software	714-970-9147; Fax: 714-692-9189; Web: www.mvasoftware.com	37
One Man and A Cat	E-mail: questions@onemanandacat.com; Web: www.onemanandacat.com (no phone)	17
PalmPC World	Phone and Fax: 800-490-7256; E-mail: info@palmpcworld.com; Web: www.palmpcworld.com	33
PEPID	888-321-7828; Web: www.pepid.com	10
PDA Inc.	415-641-2450; Web: www.pda-expo.com	15
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Thaddeus Computing	800-373-6114 or 515-472-6330; Fax: 515-472-1879	8, 53
The Palm-Size PC Store	248-542-8883; Fax: 248-542-3255; Web: www.palm-size-pc.com	58

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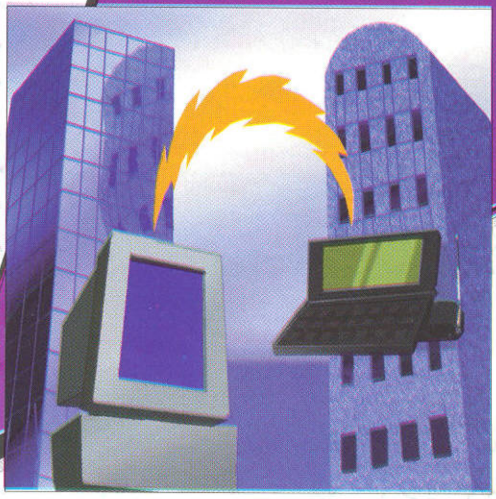

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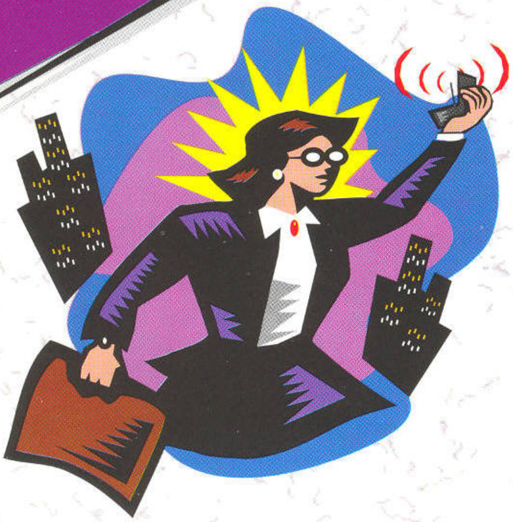

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